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AN OFO PHONETIC LAW

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1. In an earlier article in the International Journal of American Linguistics I have endeavored to prove that certain consonant groups—chiefly those in which the last component was a stop sound—were at one time contracted into a single stop consonant in languages of the Dhegiha branch of the Siouan family. I succeeded in collecting a sufficient number of examples to show that the consonant arising in this way corresponded to the series which Dorsey terms SONANT-SURD. In the course of my demonstration an attempt was made as well to account for this evolution in Dhegiha by the application of phonetic principles, and I finally thought my views were corroborated by establishing intermediate forms surviving in Hidatsa.

By the time my paper was about to be sent to America, I had just started to peruse the material which Swanton collected in 1908 from the last survivor of the Ofo tribe, published in form of an Ofo-English Dictionary, in BAE-B47 (1912), pp. 319 sqq. This was a fortunate coincidence, for without my attention directed toward the problem of the Ponca sonant-surds, I should no doubt never have suspected that this fragmentary list of words and phrases would contain anything of value for the comparative study of the Siouan languages. It was therefore with no little surprise that I first recognized principles of Ofo phonetics, perfectly analogous to those already laid down for the northern Siouan languages, and finally also "missing links" in the chain of demonstration thus far established.

As appears from Swanton's historical résumé (p. 12), Ofo is now an extinct language. Once spoken along the lower course of the Yazoo river and on the Mississippi, it was most closely related to the language of the neighboring Biloxi tribe, equally on the verge of extinction. Swanton[1] thinks both are more closely related to the eastern than to the northern Siouan dialects, and if by "eastern" we understand such a language as the now extinct Tutelo, I think the statement is fairly reasonable; in any case, as far as those particulars go which are to be treated in the present paper, the latter language often shows striking Ofo analogies (cf. for instance Tutelo ita′ñi, itá′ñ, Ofo itho^{n}′, itho′ñ *great*). As to Catawba—another eastern language near extinction—in so far as it is to be reckoned among the Siouan languages at all, I fail to see any Ofo analogies whatsoever.

In the article referred to, while dealing with initial consonant clusters, I expressed my opinion that an original *qt- appears as iht- in Hidatsa, thus making possible the identification of Hidatsa ihti′a *great, large* with certain common forms in the other Siouan languages (Mandan xta, xtɛ, Dakota t′ą′ka, etc.). The question arises whether or not all initial clusters obtain a prosthetic i- in Hidatsa, as one would expect. True

[1] Op. cit., p. 12. Evidence that Biloxi, Ofo, and Tutelo form a branch of Siouan is presented by C. F. Voegelin, Internal Relationships of Siouan Languages, AA 43. 246–9 (1941).

enough, the initial clusters in this language, judging from the material contained in Matthew's Dictionary,[2] are very rare, but on account of the ambiguity of initial i- (it is in many cases a petrified possessive prefix *his, hers*) I find myself at a loss when looking for definite analogies. In certain cases, moreover, (e.g., Hidatsa to'hi *blue*, cf. Ponca ᴛu) the supposed initial cluster is quite differently represented in Hidatsa.

The importance of Ofo for our knowledge of primitive Siouan lies in the fact that this language reiterates the principle formulated for Hidatsa, as we see from the form itho'ñ, itho$^{n\prime}$ *big, large*. It differs, however, on two points from the Hidatsa form (at least according to the description given by Swanton; see above), namely (1) by showing no direct trace of the lost implosive (appearing as -h- in Hidatsa), and (2) by retention of the aspiration of the second consonant in the cluster, as in Dakota (cf. itho'ñ and Teton t'ą'ka). In this way we lose in exactness on one point what we gain on another.[3]

As soon as the identification of Ofo itho'ñ, Hidatsa ihti'a, Dakota t'ą'ka (where the former bridges the gap between the latter two) is rendered irrefutable, we may look for the solution of other cases of initial Dhegiha sonant-surds by an examination of Swanton's short vocabulary. There appears to be in Ofo a great number of words beginning with a vowel, where the other Siouan languages lack it, and to make the study of these cases as complete as possible I shall give the entire list of them. Since i- appears in Hidatsa ihti'a as well as in Ofo itho'ñ, I consider it most appropriate to begin with cases of this vowel.

[2] U. S. Geological survey of the territories, VII. 1877.

[3] The aspiration is sometimes very marked in Ofo, as appears from the writing itxa$^{n\prime}$, i'txo^{n} for itho$^{n\prime}$ *big*. Strangely, even the glottalized form (t', etc.) appears to get aspiration in Ofo, as in the, txe *die* (= Dakota t'e), akhu *give* (= Dakota ku).

2. The Ofo word has an initial i-, where incontestable correlatives in Dhegiha and Dakota begin with a consonant, in the following cases (the spelling of the forms is simplified as far as to leave phonological values unimpaired):

Ofo ifthepi', ifthi'pi *black*: cf. Biloxi supi', Osage ça'be, Ponca sa'be, Dakota sa'pa (notice that Ofo f corresponds to Siouan s, z, as in afha$^{n\prime}$ *white* (= Dakota są), amo$^{n\prime}$fi *iron* (= Dakota ma'za).[4]

Ofo iftapta$^{n\prime}$ *ten*: cf. Osage ça'to^{n} *five*, Ponca sa'ta^{n} *five*, Dakota za'ptą *five* (for -ft-, cf. the preceding word and further below).

Ofo itca'ki *hand, fingers*: cf. Biloxi tcak *hand*, Osage sha'ge *hands, paws, claws*, Hidatsa ša'ki *human hand*, Dakota śake' *nails, claws, hoofs*. In this case there is some doubt as to the i-, which may be the possessive prefix (cf. Hidatsa iša'ki *his, her hand*).

Ofo itca'nti *the heart*: cf. Biloxi yandi, yanti, *id.*, Dakota ć'ąte', *id.* The same remark holds for this word as for the preceding one.

Ofo itce'pi *door*: cf. Biloxi aye'pi, aye'wi *door*, Osage ţsi' zhebe (*house*) *door*, Ponca ᴛi-je'be, *id.*

Ofo itchi' *fat, oil, grease*: cf. Biloxi tci^{n} *grease*, Dakota waśį' *fat*.

Ofo itcho'hi *green, unripe*: cf. Biloxi tohi', to'hü *blue, green*, Ponca ᴛu, *id.*, Dakota t'o, *id.* The Ofo form is not quite identical with those in the other languages, but may be said to bear the same relation to the latter as Dakota śa'pa *dirty, defiled, blackened* to Dakota sa'pa *black* (cf. Boas, Some traits of the Dakota language, in *Language*, vol. 13). Cf. Ofo itho'hi, below.

Ofo ichoti *neck, throat*: cf. Biloxi do'di *the throat*, Osage do'dse *throat, gullet*, Dakota dote' *throat* (here i- is probably the possessive prefix).

Ofo itco$^{n\prime}$, itca$^{n\prime}$, i'tco^{n} *tree, wood*: cf.

[4] In the same cases Osage has ç, (approximately) the first sound in English *thin*.

Biloxi aya$^{n'}$ *tree, wood*, Osage zho$^{n'}$, *id.*, Ponca ja^{n}, *id.*, Dakota ć'ą, *id.*

Ofo ithe'fi, the'fi *belly*: cf. Osage ṭse'çe, Dakota tezi' *belly* (here i- is probably the possessive prefix).

Ofo itho'hi, ito'hi *blue*: cf. Ponca ᴛu, Dakota t'o, *id.*

Ofo itho$^{n'}$, itho'ñ *big* (see above): also cf. Ofo itho$^{n'}$ *grow.*

Ofo ito' (ito'ki) *man, male*: cf. Biloxi indoke' *male animal*, Osage doga', Ponca nu, Dakota mdo, mdoka' *man, male* (< *mlo).

Ofo itxa' ahe' *deer horn*: cf. Biloxi ta, ita' *deer*, Osage ṭa, *id.*, Ponca ᴛa, *id.*, Dakota t'a, *id.*

Ofo i$^{n'}$tco, i^{n}tco' *body, flesh, corpse*: cf. Biloxi yo (1) *body*, etc., (2) *fruit of any plant*, Osage zhu *flesh, body*, Ponca ju, *id.*, Dakota ć'o (Riggs) *kernel, meat of grain.*

Ofo ifhi' *foot* (this form was recorded once by Swanton along with tcifhi'): cf. Biloxi si, Osage çi, Ponca si, Dakota siha' *foot.*

Ofo i'fhu *seed*: cf. Biloxi *su*, id., Osage waṭo$^{n'}$ -çu *squash* or *pumpkin seed*, Dakota su *seed.*

3. We shall now enumerate some words beginning with any of the other vowels:

Ofo a'pha *head*, cf. Biloxi ᴘa, Osage pa,[5] Ponca ᴘa, Dakota p'a *head.*

Ofo athi' *house(s)*: cf. Biloxi ti, Osage ṭsi *house*, Ponca ᴛi, Dakota t'i, *id.* (also = *live, dwell*).

Ofo aphe'ti, aphi'ti *fire*: cf. Biloxi pe'ti *fire*, Osage pe'dse, Ponca ᴘe'de, Dakota p'e'ta, *id.*

Ofo a'ni, ani' *water*: cf. Biloxi ani', ni *water*, Osage, Ponca ni, Dakota (Teton) m.ni (məni), (Santee) mi'ni, *id.*

Ofo atchu'ti *red*: cf. Osage zhu'dse, Ponca ji'de, Dakota du'ta *red* (this word shows the consonant alternation *l-: *ć-: cf. Ofo itcho'ti, above).

Ofo akhi'si (aki'si) *turtle*: cf. Ponca ᴋe, Dakota ke (Riggs), Mandan pkɛ.

Ofo ako$^{n'}$si *bee*: cf. Biloxi ka^{n}xi', *id.* (Ofo s corresponds to x in the other languages, as in nashu'si = Biloxi nixuxwi', Ofo nashe' *listen*, where sh = s + h: cf. Dakota naȟ'ǫ' *hear*, no'ǧe *ear*).

Ofo amo$^{n'}$fi, amo'fi *iron, pot*, etc.: cf. Biloxi ma'sa *iron, metal*, Osage mo$^{n'}$çe, *id.*, Ponca ma$^{n'}$ze, *id.*, Dakota ma'za, *id.*

Ofo amo$^{n'}$ki *breast*: cf. Biloxi mak, Osage mo$^{n'}$ge *chest, breast*, Dakota ᴍaku' *breast* (cf. below).

Ofo atchu'ñki *dog*: cf. Biloxi tcu'ñki, tcuñki' *dog*, Osage sho$^{n'}$ge *dog, wolf*, Ponca cañ'ge *horse*, Dakota šų'ka *dog, horse*, etc.

Ofo ako$^{n'}$ti *peach*: cf. Osage ṇo$^{n'}$dse *plums*, Ponca ᴋan'de, Dakota ką'ta, *id.*

Ofo atafte' (-fthe') *burn* (and others in *ata-*): cf. Osage da-, Ponca na- (this prefix is lacking in Dakota). The relation Osage d-, Ponca n recurs in Osage doga', Ponca nu *male*, Osage dse (< *de), Ponca ne-u'θica^{n} *lake*,[6] where Dakota has (Santee) md-, (Teton) b.l-, originally perhaps *ml-. Here —as in some other cases—it is to be noticed that Hidatsa, too, has an initial a- (ara-, Matthews ada-, prefix denoting *action by fire*).

Ofo ato' *potato*: Biloxi ato', ado' *potato*, Osage do, Ponca nu, Dakota mdo (cf. under atafte').

Ofo ato'k(i) *summer*: cf. Osage doge', Dakota mdoke'tu, *id.*

Ofo a'tho^{n}hi *to run*: cf. Biloxi ta^{n}hi$^{n'}$ (i'ta^{n}hi^{n}), *id.*, Osage ṭo$^{n'}$thi^{n} *run*, Ponca ᴛa$^{n'}$θi^{n} *running*, Dakota ptą'yą *flurried.*

Ofo ahe', ahi' *horn*: cf. Biloxi ahi', ahe', he *skin, nails, horn, hoofs, bark*, etc., Osage he *horn*, Dakota he *horn(s)*.

Ofo a'ho *bone*: cf. Biloxi aho', ahu', haho' *bone*, Osage wahiu' *a bone*, wahi'

[5] k, p, ṭ, etc., are sonant-surds, corresponding to Ponca ᴋ, ᴘ, ᴛ; historically they take the place of original aspirated tenues as well.

[6] The last part of the word = Osage uthi'sho^{n} *marching around in a circle* (suggesting a *round body of water*).

bones (probably vowel change in the plural: cf. Chiapanec noca *stone*, nica *stones*), Ponca wahi'ge *the bones*, Dakota hu *bone*, *bones* (mihu, nihu *my, thy bones*), hi *tooth*, *teeth* (mahi *my teeth*), showing the same vowel change (the original function of the front vowel is presumably diminutive).

Ofo upo'fi *night*: cf. Biloxi psi, pus, pusi' *night, dark*, Ponca ᴘa'ze *evening*, Dakota kpa'za, tpa'za *dark(ness)*.

4. Regarding the initial vowel in Ofo we may safely say that it is a mutable or at least movable element.[7] We may compare the following forms in Ofo: itho'ñ *big*, beside itca'ki tañ *thumb* (*big finger*), no$^{n'}$-pi txo^{n} *Christmas* (*big day*), a'ni tha^{n} *the ocean* (*big water*), i$^{n'}$tufi txo^{n} *large room*; atchu'ti *red*, beside a'ni tchu'ti, abo'ki tchu'ti *Red river*, pa-tchu'ti *red-headed*; upo'fi *night*, but o$^{n'}$taske phu'fi *morning star*; ate'kna *I go*, beside bokxi' tekna *I am going abroad*; in these examples the initial vowel is missing after another vowel. Besides we find many other word pairs, such as amo'ñki: mo'ñki *breast*, i'dokfahi: do'kfahi *old man*, a'pha *head*: pa-tchu'ti *red-headed*, etc. (along with others mentioned already before), where the alternation originally may have been motivated in the same way as in the first case.

In Biloxi, too, we find the same circumstance (I have usually given the Biloxi forms without the initial vowel, following the practice in Dorsey and Swanton's vocabulary).[8] In other respects the adventitious vowel shows a certain stability. I have found no example of an alternation between different vowels in the same words, and the fixed quality of the vowel often remains even when we pass from one language to another. Thus we find i- (apart, of course, from the cases where this vowel is a clear possessive prefix) in Ofo ito' as well as in Biloxi indoke' *man, male*, in Ofo itxa, Biloxi ita *deer*, and a- in Ofo athi, Biloxi a'ti, ti *house*, Ofo ani, Biloxi ani', ni *water*, Ofo amo^{n}fi, Biloxi amasi', masi', ma'sa *iron*, Ofo ato', Biloxi ato', ado' *potato*, Ofo afha^{n}, Biloxi asa^{n}, sa^{n} *white*, Ofo atchuti, Biloxi atcūtka, tcūt, tcti *red*, where even Tutelo has asùñi, asañi, asai, asei and atsūti, atçūti, atçūt, respectively: in the latter language we find ita'ñi, itūñ *great* (= Ofo itho$^{n'}$),[9] but atī *house* (= Ofo athi', Biloxi a'ti, ti).[10] As example of a divergent representation we may quote Biloxi aya$^{n'}$ *tree* (= Ofo itco^{n}), Biloxi ayepi *door* (= Ofo itcepi), Biloxi atci$^{n'}$ni (tci^{n}ni) *fat* (= Ofo itchi), and Tutelo asépi, asùp *black* (= Ofo ifthipi), otō *green* (= Ofo ithobi).

We started the discussion of initial vowels in Ofo by quoting the analogy of Hidatsa ihti'a and Ofo itho$^{n'}$ *great*. Yet the former word appears to be the only one of this type out of the few Hidatsa words that I am able to identify with corresponding Ofo forms (on the whole it appears that Hidatsa is far more distantly related to Ofo than are even Dakota and Dhegiha, while Ofo, Biloxi, and Tutelo apparently constitute a linguistic group of their own). The question now arises whether it is possible to explain the adventitious initial vowels in Ofo and other southern and eastern Siouan languages as supporting vowels before original consonant clusters, as evidenced by Dakota forms or indirectly by the oc-

[7] These vowels are often represented as short, e.g., ąkhu *give* (ą = English short u), ąto' *potato*, ɬtho$^{n'}$ *big*, etc., but this probably has nothing to do with their origin. If ąthi' *house* differs from athi' *father* (with original *a-) in Swanton's notation, this fact still does not prove that an anorganic initial vowel is of shorter duration, for in the same notation we find ɬthe'fi *belly*, in which i- most certainly is a possessive prefix (in primitive Siouan *i-).

[8] BAE-B 47.

[9] In Tutelo also this word loses its initial vowel after another vowel, as in ye-tañi, ye-tañ, etc., *ocean*.

[10] Notice that a- occurs in this word in Hidatsa also (ati'), which latter form has no pre-aspirated t and probably represents an original *a-t'i.

currence of sonant-surds in Ponca, or in general by initial stress in the living Siouan dialects.

5. That most consonant clusters, whether initial or middle, are simplified in Ofo is beyond doubt: cf. Ofo ta'fe *bite*, Dakota yaksa', *id.* (Siouan y- > Ofo d, t, Siouan s, z > Ofo fh, f), Ofo tu'fafha *tear*, Dakota yuksa'ksa *break off* (the original Ofo form of which must have been *yusasa: cf. Osage thiçe' *cut with scissors*). The few cases of remaining consonant clusters in Ofo (e.g., ktxe, kte *kill*: cf. Dakota kte, *id.*) are probably of secondary origin, depending on a later syncope: cf. Biloxi ksa^{n}, Ofo kifa^{n} *five*, Biloxi kte, kite' *hit*, which latter either equals Dakota kat'a' (Riggs; kaṭa') *kill by striking* or kikte' *kill one's own*; that the Ofo form does not represent original *kte further becomes likely on account of the aspirated t, which, as we have said (note 3), may render an original glottalized *t', as in Dakota kat'a'. In Biloxi many other cases of the same type might be quoted, such as tcti *red* (= Ofo atchu'ti), psi *night* (also pusi' = Ofo upo'fi), etc. Exception has of course to be made for such clusters as remain in all Siouan languages, e.g., sk, st, etc., as in Ofo cpa^{n} *rotten* (= Dakota śpą *cooked, burnt,* or *frozen*).

6. That the initial vowel, which characterizes Ofo, Biloxi, and Tutelo, at least in many cases is an anorganic prosthetic element of secondary origin appears from two considerations: (1) that it is difficult to explain the loss of this vowel in Dakota and Dhegiha if it were ancient in Siouan, and (2) that it is often missing in Ofo, Biloxi, and Tutelo, especially when a vowel precedes in close context. The problem would be solved without difficulty if we did not have to consider the different representation of the supporting vowel.

The reason for the differentiation between prosthetic i- and a- (of u- we have but a single instance, with which we shall deal later on) is not immediately perceived. Evidently it cannot be accounted for by the nature of the following consonant, neither by the root vowel. It thus remains to seek the different representation in the nature of the lost implosive, which latter is unfortunately in most cases an unknown quantity. In the few cases where it may be ascertained from comparison either with Dakota forms or with unsyncopated Hidatsa forms we find, however, that an original labial consonant often enough corresponds to a prosthetic a- in Ofo, of which the following examples give evidence:

Ofo ani' *water*: cf. Dakota (Teton) m.ni, Hidatsa wi'ri (mi'di), Ponca and Osage ni (< *mni).

Ofo akhisi *turtle*, if related to Dakota ke, Mandan pkɛ, Ponca ĸe, Osage ke from *pke or *mke).

Ofo atho^{n}'hi *run*: cf. Dakota ptą'yą *flurried* (from *ptan-).

Ofo ato' *potato*: cf. Dakota mdo, Ponca nu, Osage do (from *mlo).

Ofo atchuñki *dog*: cf. Hidatsa mašu'ka (Matthews), Dakota šų'ka, Ponca cañ'ge, Osage sho^{n}'ge (from *mšonk-).

Ofo ako^{n}'ti *peach*: cf. Hidatsa makata *plums* (Matthews), Dakota ką'ta, Ponca ĸan'de, Osage ko^{n}'dse, *id.* (from *mkant-); Biloxi tka'na, tokona' is hardly connected.

In the last two examples the relation between the Hidatsa and Dakota forms is as between Hidatsa mata', Dakota ptąye'tu, Mandan pta *autumn* (cf. also Osage to^{n} *fall of the year*).

We may add the verbal prefix ata- (expressing *action by heat*). Here the Ponca and Ofo representations (na- and da-, respectively) let us suppose the same initial cluster as in ato' *potato* (probably *ml-).

The only word which breaks with the above system is Ofo ito' (ito'ki) *man, male* (Biloxi indoke', *id.*), to which correspond Dakota mdoka', Ponca nu, Osage doga' (hence probably originally *mlo-). But as

to this word we may question whether i- may not be a possessive prefix: cf. Biloxi nsa intoki' *buffalo bull* (lit. *buffalo, her male*?). In any case it is not improbable that such a form was at one time generalized as a convenient means of distinguishing between the words *male* and *potato* (in Ofo ito' and áto', respectively). It might therefore rather be said that Ofo ito' represents original Siouan *i-mlo, not *mlo.

The theory that a labial implosive evolves a prosthetic a-, not an i- (as do presumably the other lost consonants), finds its support —as it seems—in the verbal inflection in Ofo. In this language we find a class of verbs which probably form the first person singular by a single *m- (cf. Dakota mda, mde, Ponca bθa, bθe, Osage bthe *I go*: from original *m-ya-). In the 2d person Ponca and Osage have a form in *ś- (Ponca cna, cne, Osage stse *you go*: cf. Ponca e'gi-m-a^{n} *I do*, e'gi-j-a^{n} *you do*), the origin of which is not clear. This paradigm recurs in Ofo, where te, ti (< *ya-) *go* has the following forms in the 1st and 2d persons singular: a-te'kna *I go*, c-te'kna *you go* (here, as mostly elsewhere, c represents the English sh). In Biloxi the form is n-de'-(kne) in the 1st person.

According to the same paradigm the (Ofo) verbs -tó^{n}hi *see* and -khu *give* are conjugated: ´a-to^{n}'hi, c-to^{n}'hi (cf. Biloxi n-do^{n}'hi *I see*: Dakota t'ą' *visible*), a-khu'hi *I am giving it to him* (cf. Biloxi xku I *gave it to*); we must then assume that *m-y- (like *m-l-) gives nd- and *m-k-, xk- in Biloxi.

It may perhaps be objected here that a- does not necessarily represent a Siouan *m, but, on the contrary, that both in Ponca and Osage a- is a common sign of the 1st person singular, corresponding (in meaning and function) to the Dakota wa-. Whatever the origin of this a-,[11] it does not enter into the paradigm in which ś- functions in the second person. Furthermore, Ofo has an alternative 1st person prefix in ba- (e.g., ba-tu'tcha *I wash*, ba-bute *I shine*, etc.), which evidently formally covers Dakota wa-, whence a third form *a- would seem superfluous.

It is worth noticing that Ponca ɾi *I come back* (beside gi *he comes back*: from *m-ku, *ku) corresponds to Ofo a-kiu'kna *I come* (cf. kiu'kna *he comes*), and this evidently is a very old form. In Osage the verb do^{n}be *see* (= Ponca da^{n}ba-) is conjugated as follows: a'ṭo^{n}be, a'shto^{n}be, do^{n}'be, corresponding to Ponca ta^{n}'be, cta^{n}' be, da^{n}'be, in which we may conclude that the first person at one time contained the complex *-m-tampa. It is evident that a- is a later increment in Osage, which I think can be explained from the occurrence of the same initial element in verbs originally containing the verbal prefix a- (e.g., Osage a'do^{n}be *escort*, of which the 1st person singular is a'ṭo^{n}be, from *a-m-tampa-). This a- must have been mixed up with the a- of the 1st person singular, found in the parallel conjugation (e.g., Ponca a-na''a^{n} *I hear*, which is na-wa'-ĥ'o in Dakota), so that we obtain the contaminated form a'ṭo^{n}be *I see* in the single verb also, and then also a'shto^{n}be in the second person. We find similar contaminated forms in Ofo also, e.g., a'tho^{n}hi *run* (= Osage ṭo^{n}' thi^{n}): a- was understood as the verbal prefix a-, whence the 2d person was made a-c-tho^{n}hi *you run* (cf. c-to^{n}'hi *you see*, to a-to^{n}hi *I see*), and the 1st person became a-ba-tho^{n}hi *I run*, instead of *batho^{n}-hi (corresponding to Osage a-ṭo^{n}-bthi^{n} *I run*; also cf. Dakota ć'ąte'-ma-ptąyą *my heart runs*, i.e., *I am angry*). The same thing has happened to Ofo akhu *give*, which was originally a form used in the 1st

[11] I think it might be explained in the following way: After the verbal prefix o- *in, into* (in Dakota o-, but in Ponca and Osage u-) the w of the personal prefix wa- *I* was merged into the u-sound and lost. It still occurs in Osage (e.g., u-wa'-çe *I start a fire*, from u-çe', u-wa'-dse *I seek*, from u-dse' = Dakota o-wa'-de), but evidently only as a glide between u and a (as it is absent in every other case). In Ponca the same verbs have u-a'- in the first person singular.

person singular (*m-ku, *m-ku *I give*), alternative to bakhu (= Dakota wa-ku′, Osage a-ku *I give*). When, however, a- came to be regarded as the verbal prefix, a new form a-ba′-khu was made (analogous to Dakota a-wa′-tọwą *I look at*, from a-tọ′wą *look at*).[12]

It now remains to account for the vowel u- in Ofo u-pofi *night*. Here we know incidentally that the lost consonant must have been either k or t (cf. Dakota kpa′za, tpa′za *dark*), but since the u-shade in the prosthetic vowel could have been effected by neither of these, nor from the following o (as we may ascertain from comparison with other similar words), the idea must be abandoned that u- originated from a supporting vowel in this word, which instead might be identified with Dakota o′kpaza, o′tpaza *darkness, night*, Osage u′paçe *evening*.

7. The following phonetic law may thus be established for Ofo: INITIAL CONSONANT CLUSTERS WERE AT ONE TIME PRONOUNCED WITH A SUPPORTING VOWEL, WHICH WAS a- BEFORE A LABIAL, IN OTHER CASES i-. THE CLUSTER WAS EVENTUALLY SIMPLIFIED, MUCH ON THE SAME LINES AS IN DHEGIHA, ASPIRATION IN THE LAST COMPONENT REMAINING AS IN KANZA. A similar law appears to be valid for Biloxi and Tutelo also.

In consideration of these facts, Hidatsa ihti′a and Dakota t′ą′ka *great* are more easily derivable from a common source. By so doing we must grant preference to the form recorded in *Hidatsa Texts*[13] over the one given by Matthews (içti′a, with a palatal fricative). The most primitive stem attainable appears in any case to be *Xtan-, as far as Dakota and eastern Siouan goes; in assuming relationship with the Hidatsa word, we must further reduce the primitive stem to *Xta-, or even *Xt- (where X stands for a certain non-labial stop). To determine the latter with safety, we must await the further results of comparative American Indian linguistics, as it is likely that no living Siouan dialect is phonetically conservative enough to be capable of furnishing the answer.

Some of the Ofo words quoted above afford special points of interest. Thus we find an intrusive -t- in ifthepi *black* and iftapta[n] *ten*. Here it seems possible that Ofo has preserved an original cluster by metathesis of a harsh combination (*ts?) to one tolerated in Ofo (*st > ft?).[14] In such a case we shall have to restore primitive bases *t(ə)s′ap- (*t(ə)s′əp-) and *t(ə)-sap(ə)t-, respectively. The accent in the Dakota and Dhegiha forms warrants the loss of an initial syllable in either word.

Ofo i-tca′ki *hand*, i-tca′nti *heart*, i-tchoti *neck*, i-the′fi *belly*, i-fhi′ *foot*, and perhaps some others (for i-to′ *man, male*, cf. above) no doubt contain a possessive prefix *his, her*, etc.; hence we find regular stress in Dakota śake′, ć′ąte′, dote′, tezi′). The irregular stress in Osage (sha′ge, do′dse, ţse′çe) may perhaps be due to the influence exerted by frequent use of the possessive forms (it is often quite impossible in American languages to express such words without a possessive prefix).

In Ofo ophe *come inside* (bo′phe, tco′phe *I, you come inside*)[15] we have, of course, the same prefix as in Dakota o′p′a *enter a camp*, Ponca ti u-pa′ *enter a lodge*. The aspiration in the Dakota form is borne out by Ofo. In my previous article I postulated a primitive form *pqa: perhaps the *q, which in other positions seems to change to

[12] Swanton gives aba′khu in the specialized sense of *I give to eat*, but as the verb ku *give* is neither in Dakota nor Dhegiha composed with the prefix a-, I think that this latter sense is not originally distinct from that of *give*.

[13] Prehistory Research Series of the Indiana Historical Society, No. 1.

[14] In itchepi′ *dirt, dust*, however, the difficulty is avoided by the change of *ś (cf. Dakota śa′pa *dirty*) to tc (= English ch) in Ofo, in which sound the supposed initial *t- is readily merged.

[15] In Tutelo ope-wa means *go* (o-wa-pe-wa *I go*, etc.).

x in Dakota as well as in Ofo (cf. Ofo nashe′ *listen*, Dakota naȟ'o′, Osage no^{n}k̨o^{n}′ *hear*, < *naq-) is responsible for the aspiration of the preceding p.

Among the Ofo words beginning with the prosthetic a- several problems arise. Apha′ *head* (as against pa-tchu′ti *red-headed*) may, in analogy with some of the verb forms, be explained as a petrified possessive form, = *my head* (< *m-p'a; cf. Dakota ma-p'a′ *my head*). If this is so, the Dakota and Dhegiha forms (p'a and ра, respectively) are to be understood in the same way (sonant-surd р arising from *p-p'- < *m-p'-). In Ofo athi′ *house*, however, the initial a- should no doubt be explained differently, as it occurs in Hidatsa as well (ati′); for the Dhegiha form, cf. my previous paper on sonant-surds in Ponca-Omaha (p. 84).

Before original s and ś (= English sh) any labial must be preserved in Dakota (as p-). Hence Ofo afha^{n}′ *white*, atchu′ñki *dog*, atchu′ti *red*, cannot strictly correspond to Dakota są, sų'ka, Ponca ji′de, respectively. In these words we must count with movable prefixes, the precise function of which may presently not be ascertained.

In the stems beginning with m- (amo^{n}′fi *iron*, amo′ñki *breast*), it is more difficult to assume an original cluster, since the common movable prefix *m(a)- might be supposed to fuse with the stem-initial m-, as in Dakota ma′za, etc. The Hidatsa form uwa′ca (c = ts: Matthews gives u′etsa), on the other hand, rather seems to correspond to a Dakota form *o-ma′za, which I do not think is attested. Could it be possible that such a form once existed and that the general forward accent in this word is due to it? But amo′ñki *breast*, *ribs* should doubtless be judged as apha′ *head*, i.e., with a petrified 1st person possessive prefix.[16] Since this form, then, may be strictly analogical, amo^{n}′fi is the only example to support the passing of *m-m- into am- in Ofo. The accent in Dakota (maku′, as against Osage mo^{n}′ge: cf. the forms with possessive i-) renders it highly probable that we have here a form with a possessive prefix.[17] In the same way Ofo, Biloxi ahe′ *horn*, aho′ *bone* may be explained (cf. Dakota mihu′ *my bone*, *leg*): that *m- turns into an implosive consonant before h becomes likely when we consider Dakota e′pa (Teton e′p'a) *I say*, from *e-m-ha (cf. Hidatsa ha·-, he·- *say*), the difference being that the implosive is altogether suppressed in the former languages.

To sum up, we shall point to the following general characterization of the forms quoted in the preceding paragraphs: regardless of the manner in which the primitive Siouan form is to be restored in every particular case, the fact still remains that the occurrence of a prosthetic vowel in Ofo, Biloxi, and Tutelo is almost without exception concomitant with the appearance of initial sonant-surds in Ponca, as well as with initial word stress in the Siouan languages at large.

[16] It should be noticed that most people usually give the names of bodily parts by prefixing *my* (or sometimes *your*), at the same time pointing at the part in question.

[17] Dealing with these words merely from a Siouan point of view, I have been forced to assume that *m- is a form of the 1st person possessive prefix. Looking at the problem more generally, I feel inclined to think that this movable *m(a)- in Siouan is in reality a correlative to the Algonquian (Blackfoot) m(o)-, in for instance m-otokâ′ni *head*, m-oke′kin *breast*, etc., where it expresses an indefinite owner.

ETHNO-LINGUISTIC OBSERVATIONS ON SAN BLAS CUNA

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1. Introduction
2. Special vocabularies and stylistics
3. Tabooed words
4. Cultural interests reflected in the vocabulary
5. Cuna linguistic theory
6. Evaluation of contact languages
7. Mnemonic devices

1. The writer's interests while among the San Blas Cuna of eastern Panama[1] were not especially concerned with linguistic analysis; the following notes are presented primarily as an elucidation and amplification of linguistic materials already in print. The examples given are intended only as illustrations; many similar items can be readily found, in context, in the publications noted below.[2]

The Cuna language belongs to the Chibchan stock. The San Blas Cuna, numbering about 21,000 in 1940, live on small coral islands of the San Blas archipelago along the Caribbean coast of eastern Panama; the Mainland Cuna, numbering between 5,000 and 6,000, inhabit small villages in the headwaters areas of the rivers on the Pacific slope of the eastern Panamanian Cordillera. Of the two groups, the San Blas Cuna are the more acculturated; it is among them that the following observations were made and to whom they particularly pertain. Contact languages have been Spanish ever since the Conquest; English since the late 16th Century, as a result of traffic with pirates and privateers, traders, service as sailors by Cuna men on trading ships, and the establishment of an American population in the Canal Zone; and French during the last decade of the 17th and first half of the 18th centuries when a Huguenot colony existed on the San Blas Coast. Negro slaves were brought directly from Africa to Panama in the early years of the Conquest and Negros and mulattoes have lived on the borders of the Cuna ever since; they have, however, been Spanish-speaking since soon after their arrival and whatever linguistic influence they may have had on the Cuna is as yet unknown.

2. Aside from the special vocabularies pertaining to the activities of the sexes, and which are mutually understood, the San Blas Cuna language contains a highly specialized, semi-secret vocabulary known only by part of the men and actively used only by the chiefs, medicine men and ceremonial chanters. One of the principal duties of the village chiefs is to hold frequent meetings. About half of these are attended by the men alone and are devoted to a discussion of local problems, political matters, etc., and in them daily speech is employed. The remainder are attended by the women as well and have a more formal character. At these the chief ser-

[1] Field work accomplished in 1940–1941 while holding a Cutting Traveling Fellowship, Columbia University. The present paper has been written with the aid of a grant from the American Philosophical Society.

[2] E. Nordenskiöld, Picture Writings and Other Documents, Comparative Ethnographical Studies, No. 7, Pt. 1 (Göteborg, 1928); same, No. 7, Pt. 2 (Göteborg, 1930); E. Nordenskiöld, An Historical and Ethnological Survey of the Cuna Indians, Ed. by Henry Wassén, Comparative Ethnographical Studies, No. 10 (Göteborg, 1938); H. Wassén, Original Documents from the Cuna Indians of San Blas, Panama, Etnologiska Studier, No. 6.1–178 (Göteborg, 1938); for additional problems which may be treated in ethno-linguistics, see: C. F. Voegelin and Z. S. Harris, Linguistics in Ethnology, SJA 1.455–65 (1946).

monizes to his audience, usually while lying in a hammock. The speech or sermon is based on the myths, folktales and legendary history of the tribe and serves as a series of moral precepts and exemplary behavior forms for the assemblage. Though nearly any current situation can be paralleled in the oral literature, these speeches are not intelligible to the women and most of the men, for the chief renders them in allegorical form and employs special words and euphemisms for people, animals, plants, things, mythological characters and places, and also sings or chants the sermon. Thus, foreigners become *pelicans, wild birds,* and *insects*; women are *flowers*; Negros *vultures*; and tule *man* becomes *inatonaibe owner of the chicha*; masi *plantain* becomes ibenîali; kingi *gun* becomes ibetintula.[3] To be understandable to the audience these speeches must be translated into ordinarly vocabulary by one of several interpreters who are elected to their position (as are all other village officials). Tribal leaders and the chiefs of the two political parties into which the San Blas Cuna are now divided also employ allegorical and euphemistic stylisms in their political speeches, which, in recent years, have sometimés been given in Spanish or even in English.

The medicine men and puberty ceremony chanters, who as part of their professional training have also learned the myths and tales, employ the same special words in their chants, and in fact often are chiefs, for in learning the special vocabulary they have fulfilled one of the principal prerequisites for chieftainship. A few examples of chant vocabulary are: úluka for úka *tree bark*; abalisa for ábe *blood*; pósumba for néga *house*; and punayai for yanu *peccary*. The chants of the medicine men and ceremonial leaders differ, however, from the sermons of the chiefs in that they are greatly distorted in their rendition through the employment of special accents, a higher pitch and constriction of the chest and throat muscles so that the words have a forced character. In addition, sounds imitative of the various animals and birds are sometimes interpolated after their mention in the chants. These tricks, as well as the chants themselves and the use of accompanying paraphenalia, are learned through study with an established shaman or ceremony leader, for which a fee is paid.

3. Tabooed and other strongly affective words. Of this category probably the most highly charged word in the San Blas Cuna language is Mu, the name of a female deity who is in charge of the formation of human fetuses, endowing them with their mental and spiritual attributes and who is concerned with women during pregnancy and childbirth. Mu is never mentioned lightly and is not regarded as a topic for open discussion; certain of the medicines are preceded with a chant involving Mu, and this chant, which is not known by all medicine men, is never sung as loudly as others and indeed is sometimes only "thought through."

The circumspection concerning Mu is one aspect of a general attitude toward sexual matters. Thus, the genitalia, copulation, menstruation, and excretion are seldom mentioned openly and to speak thusly brands one as immoral and sinful. In part this set of attitudes is traceable to, certainly it has been reenforced by, Christian influences through the agency of missionaries and the numerous Cuna men who have worked in the past as sailors.

There is also a taboo on speaking one's own Cuna personal name, which is more rigidly observed among the women than the men. These names are of animals, plants, spirits and mythological characters but have no totemic significance. No person's name is reused in an extended

[3] Spanish sound values have been used in transcribing Cuna words, in accordance with established practice for this tribe.

family so long as he is remembered, usually a span of three to four generations. Associated with this taboo is the practice of teknonymy and other circumlocutions; another aspect is the impetus it has given to the borrowing of Spanish and English names, which can be freely used and are necessary in the ever increasing contacts with Whites.

Finally, most animals and some plants have different names for use in the daytime and at night; misuse of them is believed to bring misfortune. Thus, the *agouti* is sule by day, napnona by night, and a species of *palm*, nalub by day, is iko dúrba by night.

4. The published texts of the San Blas Cuna contain several words and concepts which are repeated with great frequency and which are very noticeable in the chants when sung. Among these are the words olo *gold*[4] and lele *wise; learned;* title of *seer-like*, highest grade of medicine men. Either or both form parts of the names of mythological characters and persons, as Oloikuipipilele, Olonibikinie, and of special names occurring in the chants, such as Dioslele *God*, purbalele *soul*, and akualele *magic stone*. Both olo and lele are heavily accented in the rendition of the chants and chiefs' sermons, but neither is heavily charged with emotion in itself. The frequent use of olo in the above-mentioned contexts immediately suggests the importance of gold in other sectors of San Blas Cuna culture, and indeed gold ornaments are now a prestigeful display item among the women and large amounts of gold articles have been consistently noted throughout the historic accounts of the Cuna ever since Balboa's time. Likewise, the lele concept is elsewhere evident in the culture, as, for instance, in the emphasis on learned or achieved statuses throughout the social structure and in the acceptance of innovations from individuals who, though marginal because of long absence from the tribe, have prestige as innovators simply because they learned and experienced new ways in the outside world.

Colors and odors are two other interests prominently reflected in the vocabulary, especially in the medicine and puberty ceremony chants and mythology. In them there occur long enumerations of different colored birds, animals, trees, rivers, souls, the furnishings of the eight underworld and eight heavenly layers, etc., such as *colored cacao. . . .red cacao. . . .blue cacao. . . .brown cacao. . . .black cacao. . . .striped cacao. . . . yellow cacao*, and *black. . . .blue. . . . striped . . . . yellow . . . . red menstruation.* Similarly, the fragrance or strong odor of flowers is emphasized in the descriptions of heaven and is an important, oft-mentioned attribute of the medicine materials both in the chants and in the conversation of medicine men. Thus also, evil spirits who have abducted human souls are forced to give them up by means of the pungent smoke of cacao beans, and odor is a prime consideration in the selection of lotions, ointments and patent medicines by the medicine men in the city stores.

5. One of the major philosophical beliefs of the San Blas Cuna is that of kurgin, an attribute of all humans which is thought to be localized in the head and which means talent, predilection, aptitude, ability or intelligence. Just as there are separate kurgin for each of the various skills appropriate to the sexes so there is also a kurgin for learning languages and becoming an accomplished orator or chanter. Individuals are regarded as being born with different amounts of this (and other) kurgin, and it is also believed that various kurgin can be increased with medicines. The linguistic skills of persons who have learned one or two foreign languages or are adept in oratory or rendering the chants are explained on

[4] From Spanish oro. Nordenskiöld believes the original Cuna word for gold to have been culi (op. cit., 1930, p. 12).

these bases. The medicines for increasing the language kurgin operate on an imitative principle, and consist of pages of books, newspapers, the ashes of songbirds and phonograph needles in water which is bathed in or drunk.

6. The loan words incorporated into the San Blas Cuna language reflect not only the cultures with which there has been contact in the past but also, in some measure, the amount of prestige accorded them by the Cuna. Though a number of words designating trade articles have been taken into the language from both Spanish and English, the latter is now the most favored of foreign languages. English-speaking Whites are rated next after the Cuna themselves (followed by Spanish-speaking Whites, mulattoes and Negros, in that order), and just as the former have been increasingly the object of imitation and emulation concerning many practices, attitudes and interests so also is the English language the one which children and young men (and to a lesser extent girls) are most eager to learn in recent years. The Panamanian government has maintained schools at a number of islands in which Spanish is taught but at some of these same islands as well as at others the San Blas Cuna have established English-speaking schools financed entirely by themselves. Although opportunities to work for wages (a rapidly growing economic interest) are more numerous in the Spanish-speaking Panamanian cities than in the English-speaking Canal Zone, nevertheless work in the latter is preferred—a further attestation of the prestige accorded English.

The prevalence of English names among the older men and Spanish names among the younger men and women and children is less an evidence of preference than it is the product of historic incident, for many of the older men have worked as sailors on English-speaking ships in the late 19th and early 20th centuries whereas the younger people have been and still are assigned Spanish names in the schools and by the missionaries and Panamanian officials.

7. Though the so-called picture-writings of the San Blas Cuna have been accurately described and interpreted,[5] the writer has encountered, in discussions with colleagues, some confusion concerning their nature. Many of the medicine and puberty ceremony chants are recorded in a series of small representative and symbolic pictures, but there is no standardization of them among the medicine men, each one using symbols intelligible only to himself and each unable to identify a text from the pictures alone drawn by another man. Their prime purpose is as an aid to keep the chant episodes in their proper order; they have no phonetic values. These mnemonic drawings are another evidence of the interest in colors noted above, for they have proliferated in recent years with the introduction of notebooks and colored crayons though they appear to be the outgrowth of aboriginal carving and painting on wooden planks.

[5] Nordenskiöld (op. cit., 1928, pp. 13–22).

SIERRA POPOLUCA SYLLABLE STRUCTURE

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1. Introduction
2. Syllable patterns
2.1. Syllable nuclei
2.2. Syllable margins
2.3. Limitations between vowels and consonants within the syllable
3. Ambisyllabic consonant clusters
3.1. Transition
3.2. Stress

1. This paper takes the syllable as the basis for an analysis of the phonemic distribution in the Sierra dialect of Popoluca of Veracruz.[1]

With a single exception, every phonetic syllable or chest pulse constitutes a structural unit, i.e., a phonemic syllable; the exception: m, n, ñ, ŋ and y, when preceded by a glottal stop and followed by another consonant or utterance-final silence. The consonants are phonetically syllabic in this position, but considering them as a part of the preceding syllable provides a neater and simpler description. For example, the word hɛ?m *that* has two chest pulses but is most conveniently described as constituting a single phonemic syllable. The following evidence supports this conclusion. (1) Other consonants which are never syllabic (such as voiceless stops) also occur following glottal stop and preceding silence: ?i'ku?t *he ate it*, mu?k *grass*. This establishes a pattern CV?C to which the pattern CV?Ç might prove to be analogous. (2) The phonetically-syllabic nasals and y are never stressed. Vowels occurring in a similar situation (i.e., after [V?]) are potentially stressed. Contrast 'hu?ŋmī *with an owl* (in which the nasal never occurs stressed following the glottal stop) with na'?amī *with gum* (in which the vowel after glottal stop is stressed). Note also hu?ŋ *owl* and 'na?a *gum* with stress on vowel preceding the [?]. These data force the investigator to conclude that the pattern CV?Ç is distinct from CV?V. From these evidences together, the conclusion is drawn that the phonetically-syllabic nasals and y function structurally like the final consonant in the pattern CV?C and thus are to be considered a part of the preceding syllable; the two phonetic syllables, then, form a single phonemic syllable.

2. In Sierra Popoluca there are three types of syllables which may be considered basic, and one special type. The special type is named thus because it occurs very infrequently in the language and is not paralleled by other similar types. These types include a total of eight syllable pat-

[1] The only available published material on the Popoluca language, aside from a few incomplete word lists, occurs in George Foster's article "The Geographical, Linguistic, and Cultural Position of the Popoluca of Veracruz," AA 45.531–46 (1943). In this brief paper Foster presents a tentative chart of the phonemes of the Sierra dialect, with brief discussions of palatalization and voicing of stops. His purpose however is to classify the Popoluca languages and presents only enough data to establish their position. The occurrence of the phonemes charted by Foster has been verified, and they are now described, with the inclusion of a further series, a set of voiced stops, which he did not handle as separate phonemic entities.

The material presented in this paper was gathered by the writer during the period 1943–45 while doing field work under the direction of the Summer Institute of Linguistics. Informants used were from the Sierra Popoluca village of Ocotal Chico, Ver. The principal informant was Fermin Gutierrez, but the data have been checked with others of the village.

The writer wishes to express thanks to Kenneth L. Pike and others of his colleagues of the Summer Institute of Linguistics for their valuable suggestions while the paper was in preparation.

terns. All syllable types have at least one initial consonant; all basic types have no more than one; the special type has two.

The first basic type is the open syllable. It may contain either a short vowel or a long vowel as the syllable nucleus. (For specific vowels occurring in the following patterns see Section **2. 2.**)

Pattern One CV ta.'nīk.pa[2] *we (you and I) go*

Pattern Two CV· 'pī·.pa *he gets fat*

Syllables closed by a single consonant constitute the second basic type. They, also, may contain either a long vowel or a short vowel as the syllable nucleus.

Pattern Three CVC ʔi.'hīk.pa *he dries it up (the river)*

Pattern Four CV·C ʔi.'hī·k.pa *he pulls it*

The third basic type is composed of those syllables which are closed by a consonant cluster. These contain only a short vowel as the syllable nucleus.

Pattern Five CVCC ʔi.'hīʔk.pa *he permits it*

Pattern Six CVCCC 'suʔks.pa *he coughs*

The special type[3] includes syllables having an initial consonant cluster. These occur very infrequently.

Pattern Seven CCVC 'tray.tʸi *lad*

Pattern Eight CCVCC 'kruʔy.či *quail*

2. 1. The nucleus of the syllable, as may be seen from the syllable patterns listed above, may only be composed of a vowel, or a vowel plus the supra-segmental phoneme of length. Popoluca contains six vowel phonemes, any of which may constitute the short nucleus, and all of which may be lengthened. These are i, ɛ, a, o, u, and ī. Of these six, four remain relatively stable, while i and o vary in quality depending on the surrounding sounds: i varies to [ɩ] when it occurs in the syllable before k if the preceding consonant is not an alveopalatal, h or w, and also when it occurs in the syllable before š if preceded by a glottal stop. Note, for example, 'pik.ši *bow*, ʔik.'ka.ʔa.ba *he kills him*, and 'ʔiš.kuy *eye*. The other phonetically-unstable vowel o becomes [ɔ] when it occurs before velar consonants or č; for example, pok *gourd water jug*, 'moŋ.pa *he sleeps*, tʸoč.'hī·m.ñi *thicket*.

Short vowels in utterance-final position end in a lenis nonphonemic glottal stop, whereas long vowels end in a nonphonemic voiceless off-glide. For example: V 'nīk.pa ['nīk.paʔ] *he goes*; V· yo·.'ša· [yo·.'ša·A][4] *he worked*.

2. 2. Syllable margins are composed only of consonant phonemes. Any consonant in Popoluca may occur in initial position in the syllable. Consonants which may occur only in syllable-initial position are: b 'ko·.bak *head;* d 'ʔi.doŋ *who knows;* dʸ[5] dʸa *no;* g 'pa.gak *cold, fresh;* l 'lɛ·.mu *hoe;* r ru·.tu.ho·p.kīy *having bumps on the skin*.

All other consonants may occur singly in final position in the syllable. Those consonants which may occur following both types of syllable nuclei (long and short vowels) are: p ʔi.'ñɛp *he kicked it*, 'ho·p.pa *it rolls;* t 'pɛt.pa *he sweeps*, 'sɛ·t.pa *he returns;* tʸ 'witʸ.pa *he walks*, 'ʔɛ·tʸ.pa *it leans;* k mok *corn*, po·k *cornstalk;* c toc *tongue*,

[2] A raised dot indicates length; a dot on the line indicates syllable division.

[3] In an article written by William Wonderly, Phonemic Acculturation in Zoque, IJAL 12.92–5 (1946), which appeared since this was written, a method was presented for describing Zoque phonemes which included Spanish loan words as a part of the Zoque language. Were this method to be applied to Popoluca (a related language), syllable patterns V, CCV, and CCV· would have to be added. Also the distribution of l and r would be changed in that then they would occur in syllable-final position. No new phonemes would be needed.

[4] Capital letters indicate voicelessness.

[5] The phoneme dʸ and its voiceless counterpart tʸ are formed with the blade of the tongue, tip down.

nu·c'nɛ? *he is serious;* č ?i'čič *he jerked it,* 'mï·č.pa *he is playing;* s hos *hole,* ?i'hï·s *he thought of it;* š šiš *cow,* mɛ·š *also;* m 'nïm.pa *he says,* ca·m *very;* n hon *bird,* 'kï·n.pa *it smells good;* ñ 'miñ.pa *he comes,* ca·ñ *snake;* ŋ 'moŋ.pa *he sleeps,* 'kï·ŋ.pa *he is afraid;* y kuy *wood,* 'ho·y.pa *he takes a walk;* h soh *oaktree,* ku.yu·h.'kï.?ï.wiñ[6] *learners.*

Of this group of phonemes the stops p, t, t^{y} and k are aspirated in syllable-final position, if not followed by a phoneme of the same point of articulation. For example: 'kɛk.pa ['kɛk'.pa?] *it flies,* but kɛk.'gak.pa [kɛk.'gak'.pa?] *it flies again.*

When followed by a nasal of the same point of articulation (and not preceded by a glottal stop), voiceless stops p, t, and t^{y} become a voiceless counterpart of the nasal, as in cap.'mɛ·y.mï [caM.'mɛ·y.mï?] *the ocean,* pɛt.'nɛ? [pɛN.'nɛ?] *it is swept,* and wit^{y}.'ñɛ? [wiN̆.'ñɛ?] *he has walked.* When preceded by a glottal stop, p, t, and t^{y} do not undergo such modification, as for example, pɛ?t.'nɛ? [pɛ?t.'nɛ?] *they are laid side by side.*

The nasals m, n, ñ, ŋ, and the semi-vowel y have a lenis voiceless off-glide in utterance-final position. This voicelessness is particularly apparent if the last syllable in the utterance contains as its nucleus a short vowel and is stressed. If the utterance-final syllable contains a long vowel, or a short vowel which is unstressed, the voicelessness is slight but perceptible: ?i.'hon [?i.'hon^{N}] *his bird;* 'ka.mam ['ka.mam^{M}] *hard;* ca·ñ [tsa·ñ$^{N̆}$] *snake;* kuy [kuy^{ɣ}] *wood.*

The nonsyllabic vocoid h takes the quality of the syllabic it precedes or follows in the syllable. When h follows a nasal or y it becomes the voiceless counterpart of that nasal or y. For example: 'hɛh.pa ['EɛE.pa?] *he rests;* 'ha·.tuŋ ['Aa·.tuŋ$^{N̆}$] *father;* ?an.'hɛ·.pɛ [?an.'Nɛ·.pɛ?] *my cup;* ka·m.'ho·m [ka·m.'Mo·m^{M}] *in the cornfield;* kuy.'ho·m [kuy.'Yo·m^{M}] *in wood.*

A problem of phonemic interpretation of the phonetic data involves the varieties of voiceless nasals which represent three distinct phonemes. (See above.) In utterance-final position, a lenis [N][7] is a member of the phoneme n, as a mere off-glide to silence, as in hon [hon^{N}] *bird.* After syllable division it is a releasing consonant and functions as a member of the phoneme h, since h following a nasal becomes a voiceless counterpart of the nasal, as in ?an.'ha·.tuŋ [?an.'Na·.tuŋ^{N}] *my father.* Preceding syllable division, it is an arresting consonant and functions as a submember of the phoneme t, as in hɛt.'nɛ? [hɛN.'nɛ?] *it is punctured.*

The unit [.N] cannot be assigned to the phonemes t or n because of contrasts such as ?an.'ha·.tuŋ [?an.'Na·.tuŋ^{N}] *my father* versus an.'tïk *my house* and an.'nak *my toad.*

The unit [N.] cannot be assigned to the phonemes h or n because of contrasts such as hɛt.'nɛ? [hɛN.'nɛ?] *it is punctured* versus hɛh.'nɛ? *he rested* and pɛn.'nɛ? *it is squeezed (between fingers).*

Nor can utterance-final [-^{N}] be assigned to any consonant other than as an off-glide of the n which it follows since there are no parallel consonant clusters in utterance-final position.

Certain consonant phonemes occur after only one type of syllable nucleus: glottal stop after short vowels only, w after long vowels only, as nï? *water,* 'ñi·w.hon *red-bird.*

Syllable-margin clusters, other than those initial ones previously listed under syllable patterns (see Section 2), occur in syllable-final position only. These are of two types: those which have a prefinal glottal stop and those without the glottal stop.

Clusters not containing the glottal stop

[6] The illustration cited is the only known example of a long vowel preceding h in the syllable.

[7] What applies to [N] is also applicable to [M] and [N̆]. It applies to [N] except that the unit [N.] would never occur, since the cluster *k.ŋ does not occur.

are: ps 'mɛps.pa *it is being cut (with scissors);* ks 'hiks.kĭy *fast.*

Clusters containing the prefinal glottal element may be either glottal stop plus a single phoneme or glottal stop plus the above clusters, ps or ks: ʔp ʔi.'haʔp.pa *he grinds it;* ʔt toʔt *earthworm;* ʔtʸ ʔi.'wiʔ-tʸ.pa *he winds it;* ʔk soʔk *grass;* ʔc cuʔc *corpse;* ʔč 'piʔč.pa *it goes out (the fire);* ʔm hɛʔm *that;* ʔn ʔi.'pɛʔn.pa *he builds-a-nest;* ʔñ hiʔñ.'ñɛʔ *it is tangled up;* ʔŋ huʔŋ *owl;* ʔy cīʔy *he stayed behind;* ʔps 'soʔps.pa *he tires;* ʔks 'suʔks.pa *he coughs.*

2.3. The chief limitations between consonants and vowels within the syllable are between the alveolar series of consonants and the high vowel i.[8] In syllable-final position only two examples of alveolars following i have been observed. These are the t in 'ti·t.tit *mestizo,* and the n in tʸa.'ga.lin *large spider.* Alveolars have been observed to precede i in the syllable, but their occurrence is infrequent due to the palatalizing effect of i in its occurrence in most morphemes. That the sequence alveolar plus i does occur is shown by the following examples: 'mak.ti *ghost,* ʔi.ni.'nĭk.-pa *he takes it,* 'ma.ʔak.si *a while ago,* ci.'ci.-mat *a proper name.*

The alveo-palatal phoneme y has never been observed to follow i in the same syllable.

3. Ambisyllabic clusters are limited chiefly in that alveolar phonemes have never been observed to occur following an alveo-palatal phoneme.[9] Voiced stops, b, d, and dʸ are very limited in their combination with other consonants. d and dʸ have only been observed occurring in clusters with glottal stop as the initial member: toʔ.'dīʔy *having earthworms,* ʔi.wiʔ.'dʸaʔy *he wound it for him.* The voiced stop b occurs in clusters with glottal stop or y as the initial member: haʔ.'boʔy.pa *he grinds,* 'ʔɛy.bĭk *again.*

The remaining voiced stop g has been observed to occur with all consonants except voiced stops and w, but only as the final member of the cluster.[10] Examples are: nĭk.'gak.pa *he goes again,* 'tīʔŋguy *metal,* ho·y.'gak.pa *he takes a walk again.*

In clusters the glottal stop occurs only as the initial member.

3.1. Both open and close transition occur between syllables. Open transition has the following forms: (1) the aspiration of voiceless stops when not followed by a consonant phoneme of the same point of articulation (cf. Section 2.2 Syllable margins), and (2) the development of a lenis shwa vowel between nasals and certain other sounds. The two members of the cluster are at different points of articulation. This development occurs in the following clusters: np, nk, ng, nm; ñp, ñk, ñg, ñm; ŋp, ŋt, ŋtʸ, ŋc, ŋč, ŋs, ŋš, ŋm, ŋn, ŋñ, ŋy. Examples are: ʔi.'pɛʔn.pa [ʔi.'pɛʔn°.paʔ] *he builds-a-nest,* 'miñ.pa ['miñ°.paʔ] *he comes,* ʔiŋ.'taʔn [ʔiŋ°.taʔn^{N}] *he fenced it (the house).*

Close transition is the lack of development of any type of aspiration or shwa vowel. It occurs in the following instances: (1) When the first syllable ends in a vowel: 'pī·.pa *it gets fat.* (2) Between syllables in which the final consonant of the first and the initial consonant of the second are the same point of articulation: ʔik.'kaʔ *he killed it,* pɛt.'ta·p *it is being swept.* (3) When the first syllable ends in a glottal stop, affricate, fricative, semi-vowel or m: 'tuʔ.mĭ *brother,* 'mī·č.pa *he is playing,*

[8] The majority of morphemes containing the vowel i causes palatalization of alveolars to alveo-palatals. This was also pointed out by Foster.

[9] This is due to the phonological process of palatalization (assimilation) which causes alveolar sounds to become palatalized after alveo-palatal sounds.

[10] The frequent occurrence of the repetitive morpheme -gak is responsible for the wide distribution of the voiced stop g.

'hiks.kĭy *fast*, 'ho?y.pa *he is angry*, mĭm.'nɛ? *he is sick*. (4) When n is followed by h; ñ by h; ŋ by w or h: ?an.'ha·.tuŋ *my father*, ?iñ.-'hɛ·.pɛ *your cup*, ?aŋ.'wɛh.pa *he shouts*, ?aŋ.'hɛh.pa *it smells foul*.

3.2. With the exception that syllables in utterance-final position containing as their nucleus a long vowel are stressed, stress is not phonologically conditioned, and is therefore phonemic. Some of the word pairs that have been observed are: '?aŋ.kĭ? *yard*, ?aŋ.'kĭ? *my hand*; '?iš.kuy.pĭk *of the eye*, ?iš.'kuy.pĭk *eyebrow*; ?i.'wat.nas *his made thing*, ?i.wat.'nas *he did it first*.[11]

[11] Few—if any—stress contrasts are seen between comparable morphemes. Stress differences develop, however, between sequences of morphemes. Leonard Bloomfield has pointed out a similar situation for English (Language, p. 90, New York, 1933). These differences in Popoluca stress cannot be handled by postulating junctures by which the stress might be conditioned.

YUMA IV: VERB THEMES[1]

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33. General remarks concerning the verb
34. Types of unconjugated verb theme
35. Verb stem
36. Reduplication of verb stem
37. Thematic prefixes
38. Compounding of prefixes
39. Stem modification in prefix-stem themes
40. Developed themes
41. Thematic suffixes
42. Reduction of theme

33. General remarks concerning the verb. The complete verb form may consist of a theme alone or, more usually, a theme plus non-thematic affixes. In the majority of cases, the complete verb form contains a pronominal prefix and a tense, tense-modal, or modal suffix. Other non-thematic affixes may occur concurrently.

The theme always indicates a condition or action and singularity or plurality of subject and object. It may also indicate direction, negation, etc. A distinction may here be drawn between the unconjugated theme, indicating usually singular subject and, if of transitive meaning, object; and the conjugated theme, indicating plurality of subject, object, or both.

The positions of the various non-thematic affixes with respect to the theme and to one another are fixed. The order of occurrence is substantive prefix—locative prefix—conditional prefix—pronominal or imperative prefix—theme—position one aspective suffix—position two aspective suffix—tense or tense-modal suffix—modal suffix—syntactic suffix. Non-thematic elements may thus be grouped into positional classes numbered according to relative nearness to the theme. A third position suffix may follow the theme immediately if no first or second position suffixes occur in the same word, but must follow a first or second position suffix that does occur in the same word. Similarly a fourth position prefix may immediately precede a first position prefix if no second or third position prefixes occur in the same word, but must precede a second or third position prefix occurring in the same word. In some cases two substantive (fourth position) or two locative (third position) prefixes may occur in the same word, but no two non-thematic affixes of any other positional class may co-occur in a single word.

Table 1 gives the relative positions occupied by the several elements of the verb form.

34. Types of unconjugated verb theme. The unconjugated theme may be either a simple or a complex element. Themes may be classified according to three levels of development.

1. Themes based on stem alone
   a. Simple-stem theme
   b. Reduplicated-stem theme
2. Prefix-stem themes
   a. Single prefix plus stem
   b. Two prefixes plus stem
3. Developed themes
   a. Simple-stem or prefix-stem theme plus <u·> . . . -v/-p
   b. Simple-stem or prefix-stem theme plus <i·> . . . -v/-p

The theme may be further modified on any of these levels by the addition of thematic suffixes. Since the presence or absence of thematic suffixes exercises no appreciable influence on the type of gram-

[1] For Yuma I (**1** to **11**) and Yuma II (**12** to **18**), and Yuma III (**19** to **32**), see IJAL 12.25-33, 147-51, 204-12 (1946).

TABLE 1

1 Aspective Suffixes	2 Aspective Suffixes	3 Tense and Tense-Modal Suffixes	4 Modal Suffixes	5 Syntactic Suffixes	Word and Meaning	4 Substantive Prefixes	3 Locative Prefixes	2 Conditional Prefix	1 Imperative k- and Pronominal Prefixes	Theme
-t assertive	-apat *oneself*	-k present-past			avʔaδótapatk *thus I also do*	av-*thus*			ʔ-1 pers.	aδó *to do* (static)
		-xa future	-lʸa optative		kamaʔéxalʸa *what would you say*	ka-*what*			m-2 pers.	aʔé *to say*
		-m subordinating			kanʸaˑmawémom *if you can do anything*	ka-*what*		nʸaˑ-	m-2 pers.	awém *to be able to do*
-t assertive			-ʔaš evidential		alʸnʸáˑpɔctʔaš *they threw me in*		alʸ-*into*		nʸ-he-me	áˑpc *to throw* (collective plural)
-t assertive		-xa future	-lʸa optative		alʸnʸiˑnʸaˑxʷilʸvətəxalʸa *I would be among you*		alʸ-adhering prefix		nʸiˑnʸ-I-ye	aˑxʷilʸv *to mingle with*
-t assertive		-k present-past		-aʔa	avʔaˑlʸʔétkaʔa *that's what I think*	av-*thus*			ʔ-1 pers.	aˑlʸʔé *to think, prefer, believe*
		-k present-past			nʸiˑnʸaˑnamák *when he left it there*		nʸiˑ-*there*	nʸaˑ-	zero-3 pers.	namák *to leave behind*
-t assertive		-xa future			ʔacʔakanáˑvtəxa *I will tell about things*	ʔac-cognate obj.			ʔ-1 pers.	kanáˑv *to tell, relate*
-t assertive		-k present-past			maţnʸiˑnʸaˑcéwtək *when he had transformed himself*	maţ-reflexive	nʸiˑ-adhering prefix	nʸaˑ-	zero-3 pers.	acéw *to create*
		-xa future	-as dubitative		avʔaʔéxas *whatever I may say*	av-*thus*			ʔ-1 pers.	aʔé *to say*
		-k present-past			walʸáˑrməcək *they do not care for it*	walʸ-adhering prefix				áˑrmec *to not desire* (collective plural)

matical modification to which the theme is subject, no sub-classification is necessary.

35. Verb stem. Verb stems are classified primarily according to the number and character of the phonemes preceding the accented vowel, a structural characteristic which has some importance in determining the type of grammatical modification to which the stem is subject; secondarily, according to the number and character of the phonemes following the accented vowel, a structural feature of slight importance in grammatical modification. Table 2 gives classes of verb stems found. About 90

TABLE 2

Accented Vowel Preceded by:	Accented Vowel Followed by:		
	Zero	c	cc
zero	v́	v́c	v́cc
c		cv́c	
vc	vcv́	vcv́c	vcv́cc
vcc	vccv́	vccv́c	vccv́cc
cvc	cvcv́	cvcv́c	cvcv́cc
cvcc	cvccv́	cvccv́c	cvccv́cc
vcvc	vcvcv́	vcvcv́c	
cvcvc	cvcvcv́	cvcvcv́c	cvcvcv́cc
cvccvc	cvccvcv́	cvccvcv́c	

per cent of all verb stems are disyllabic. Of these, the most common type is vcv́c, the next most common vcv́.

The initial vowel of stems beginning with a vowel is, with the exception of those cited below, a. The vowel i· occurs as the initial stem vowel in one stem: *i·má *to dance.* The vowel u· occurs as the initial stem vowel in the following stems: *u·nó· *to be present* (plu.), *u·pílʸ *to make a last request*, *u·vá· *to be present* (sing.), *u·v?áw *to rain*, *u·céc in *c-u·céc *to spread on the ground*, *u·ðáw in *š-u·ðáw *to wait for*, *u·páw in *š-u·páw *to know, recognize*, *u·wíc in *nʸ-u·wíc *to own*, *u·kʷé in *a·-š-u·kʷé *to slander, accuse;* possibly also: *u·páy in *nʸ-u·páy *to be used up, all gone*, *u·wálʸ in *ac-*k-u·wálʸ *to be generous.* The stems in the last two cases may, however, be *nʸu·páy and *ku·wálʸ respectively. The vowel a· occurs as the initial stem vowel of the stem *a·rawí· in *t-a·rawí· *to recover, be convalescent.*

Stems beginning in a consonant are relatively few and only a few consonants occur as initial consonants of the verb stem. A large number of these stems refer to state or condition rather than to action. The suspicion seems justified that some of the initial consonants of verb stems are petrified prefixes, probably of adjectival force. The most satisfactory evidence is found in the case of initial ?-, m-, and x-.

Stems in ?-: *?akór *to be distant* (*in time or space*), *?akúc *to be old*, *?akʷí·s *to be tough*, *?alá·y *to be bad*, *?alʸaqʷáq *to be bitter*, *?amé· *to be high*, *?anéx *to be heavy* (cf. also *manéx in *u·-manéx-ma *to be unable to lift*, -ma being privative thematic suffix), *?anóq *to be small*, *?anʸéw *to disappear*, *?anʸóym *to be ugly*, *?apálʸ *to be numerous*, *?apílʸ *to be hot*, *?apínʸ *to be warm*, *?aqół *to be long*, *?aqʷá·s *to be lazy, tired, weak*, *?aqʷés *to be yellow*, *?asám *to be light* (*in weight*), *?atáy *to be many*, *?avér *to be hard*, *?axán *to be genuine*, *?axár *to be greasy* (*melon*), *?axás *to be greasy*, *?axóṭ *to be good*, *?axʷá· *to be lazy, smoky*, *?axʷéṭ *to be red*, *?i·xán *to be pretty.*

Stems in m-: *macá· *to be hungry*, *maδá·v *to have trouble with*, *maδó·lʸq *to be sweet*, *manʸé· *to be sweet, pleasant*, *maspá *to die out* (*fire*), *matxáy *to be thirsty*, *mavís *to be soft*, *maxáy *to be a young man* (cf. *mašaxáy *to be a young woman*), *maδí· in *š-maδí· *to be ignorant of*, *mavá·r in *k-mavá·r *to grind, crush with foot*, *ma?álʸ in *š-ma?álʸ-v *to ask for, to beg*, *ma?ón in *k-ma?ón *to bend knee*, *ma?ór in *t-ma?ór *to be full*, *ma?ú·lʸ in *a·c-ma?ú·lʸ *to have high spots*, e.g., *sand is disposed in dunes*, *mu·vílʸ *to hurry.*

Stems in x-: ya-*xaca?étk *to be sex-crazed*, *xacú·r, *to be cold*, *xalká·k *to be cracked* (*earth*), *xalʸkʷá· *to hunt, search for*, *xalʸó·t *to be matted* (*hair*), *xamá·lʸ *to be white*, *xamér *to be without, to be free from, immune to, innocent of, not ready for*, *xašúy *to be*

neutral, neither sweet nor bitter, *xatálv *to be poor, bereft*, *xavašú· *to be blue, green*, *xi·pán *to be nearby*, *xi·púk *to be first*, wa-*xu·már *to mourn, lament*, *xu·már *to be young*, *xu·máy *to call someone son (m.s.)*, *xu·wáy *to be dirty white*, *xakʸí·/xakʸé· in *a·-xakʸí· *to lay across* and *a·-xakʸé·-v *to pass across, to cross over*, *xalʸʔó in *u·c-xalʸʔó *to belch*, *xasilʸ in *t-xasílʸ *to be rough, corrugated*, *xavasúy in *c-xavasúy *to blow, breathe on*.

Stems in k-: ya-*kapét *to be crazy, drunk* (poss. cf. *apét *to be brushy, obstructed*), *kakʷé in *c-kakʷé *to ask, to question*, *kamé· in *t-kamé· *to set on the edge of*, *kaná in *c-kaná *to make a decision*, *kanáy in *t-kanáy *to stop overnight*, *kavér in *š-kavér *to overpower*, *kavílʸp in *s-kavílʸp *to rest hand on*, *kavnáw in *u·-kavnáw *to lift up, support on shoulders*, *kaʔón in *š-kaʔón *to prop up*.

Stem in kʷ-: *kʷalʸxé in *s-kʷalʸxé *to tie a knot*.

Stems in l-: *laxóx in *t-laxóx *to be empty*, *layéw in *qʷ-layéw *to become morning*, *laʔáwš in *c-laʔáwš *to be emaciated*.

Stems in lʸ-: *lʸaví· *to be enough, complete, to fit*, *lʸu·vév *to be equal to, even with, the same as*.

Stems in n-: *nakʷi·múy *to be rich*, *ni·már *to be alone*.

Stem in nʸ-: ðo-*nʸamé· *to be dizzy*.

Stems in r-: *raʔók in *k-raʔók *to bend (stick)*, *raʔúk in *k-raʔúk *to hold mourning ceremony*, *raʔúy in *u·-t-raʔúy *to mend, to prepare*.

Stem in t-: *ti·nʸa·m *to be dark, to be night*.

Stems in v-: *vaqór *to blossom, ripen*, *vatáy *to be big* (poss. cf. *ʔatáy *to be many*), *varʔé in *u·-varʔé *to kneel, stand on hind legs*, *varkʸík in *a·-varkʸík *to lie on one's side*, *vaʔór in nʸam-*k-vaʔór *to succeed*.

In addition to the above, the numerals are verb stems beginning in a consonant: *ʔašént *one, to be one*, *xavík *two, to be two*, *xamók *three, to be three*, *cu·mpáp *four, to be four*, *sa·ráp *five, to be five*, *xu·mxú·k *six, to be six*, *pa·xkʸé· *seven, to be seven*, *si·pxú·k *eight, to be eight*, *xamxamók *nine, to be nine*, *ša·xú·k *ten, to be ten*.

Ordinarily the stem does not vary phonetically according to the specific thematic or non-thematic suffixes with which it occurs. A few cases of variation in the accented vowel depending on the immediately following suffix do occur.

A number of stems occur with final stem vowel -í or -ú when followed immediately by the collective plural thematic suffix -c, the present-past non-thematic suffix -ʷm, and certain other non-thematic suffixes; with final stem vowel -é or -ó respectively when followed by a thematic suffix other than collective plural -c, the future non-thematic suffix -xa, and certain other non-thematic suffixes.[2]

The stem *aðú/aðó, found only in prefix-stem themes, occurs in the form *aðú when immediately followed by the directional thematic suffix -k, in the form *aðó when immediately followed by the directional thematic suffix -m: nʸikvaðúk *he faces towards here*, nʸikvaðómək *he faces toward there*.

The stem *xakʸí·/xakʸé·, found only in prefix-stem themes, occurs in the form *xakʸí· when not followed by a thematic suffix, in the form *xakʸé· when followed by the mediopassive thematic suffix -v: a·xakʸí·k *he lays (long obj.) across it*, a·xakʸé·vək *he passes across, crosses it*.

The stems *awá·/awé *to go, to depart* and *ayá·/ayé *to go* occur in the forms *awá· and *ayá· except when followed immediately by the collective plural thematic suffix -c or the directional thematic suffix -m: vi·wa·k *he goes*, vi·wéck *they go*, vi·wémək *he goes away;* vi·yá·k *he goes along*, vaði·yéck (< vaðî *here* ayéck *they go*) *they are so big, so high, etc.* (lit. *they go to here*), vi·yémək *he goes away*.

In a few cases, two stems of very similar meaning are distinguished from each other by the quality and length of the accented

[2] A list of the themes in which such stems occur is to be found in **59**.

vowel; it may be conjectured that one is derived from the other by vocalic ablaut: *anʸór *to be striped* > *anʸú·r *to be varicolored;* *šavʔór *to be sleepy* > *šavʔú·r *to be drowsy* (poss. dialectic forms?); *xacú·r *to be cold*, cf. xacór *winter;* *ʔakór *to be distant* (*in time or space*), compare ʔakú·r *to be near* (*in time*) (e.g., ʔakór aʔí·m *it will be a long time*, ʔakú·r aʔí·m *it will be a short time*); *ʔakúc *to be old* > *ʔakú·c *to grow up, to mature, to grow old;* *ʔaxʷéṭ *to be red*, compare *ʔaxʷá·ṭ *to be bloody.*[3] Compare also: *t-anʸʔóq *to bend into a circle* > *t-anʸʔú·q *to bend into a small circle;* *š-apón *to glean, to rake over*, compare *š-apú·n *to stir up* (*fire*).

Numeral themes acquire a special meaning with ablaut of the accented vowel. The following are simple-stem themes: ʔašít·nt *to be one by one, far apart from one another*, xavá·k *to be in pairs, to be double*, xamú·k *to be arranged in threes*, cu·mpá·p *to be arranged in fours*, sa·rá·p *to be arranged in fives.*[4] The stem *xavík *two* undergoes further modifications: *xu·vá·k *to be double, to be in a double row*, *xavák *to be uncertain, to be of two minds;* compare also xa·vák *twins*.

36. Reduplication of verb stem. Reduplication adds to the meaning of the stem the element of repetitive activity. Only vcvc, vcvcc, and vccvc type stems are reduplicated; the initial vowel of vcvc type stems is syncopated when reduplication takes place; the initial vowel of vccvc type stems is retained: *amán *to arise* > *manamán *to go up and down;* *atóx *to have a spot* (cf. *š-atóx *to make a spot on something*) > *toxatóx *to be spotted;* *akʸéṭ *to break off, be broken off* > *kʸeṭakʸéṭ *to be broken in pieces;* *amús *to crumble, be crumbled* > *musamús *to be crumbly;* *aspúk *to be curled* (cf. *k-aspúk *to curl* (*self*) *up*) > *aspukaspúk *to be kinky* (*hair*); *axlák *to be hooked* (?) (cf. *t-axlák *to hook, gaff*) > *axlakaxlák *to be intertwined, linked;* *axmáł ? > *axmałaxmał *to scuttle, to move rapidly.*

Some reduplicated stem themes occur only with an adhering prefix nʸi·-: nʸi·-*teqatéq *to feel prickly*, nʸi·-*xamaxám *to drop one's work*, nʸi·-*qervaqérv *to be ragged, in strips.*

In a few cases, vocalic ablaut adds an intensive force to the meaning of the reduplicated stem: *šilʸašílʸ *to be long and thin* > *ši·lʸaší·lʸ *to be very long and thin;* *toxatóx *to be spotted* > *tu·xatú·x *to be thickly spotted;* *wesawés *to be fine* (*hair*) > *wasawá·s *to be fine, downy* (*chick feathers*).

37. Thematic prefixes are for the most part causative; there are, however, several thematic prefixes to which no definite meaning can be ascribed.

k- *to cause with the foot, with a large or heavy instrument, or with great force:* *kakʸéṭ (*k-akʸéṭ) *to saw* (*wood*) (cf. *akʸéṭ *to break off, to be broken off*); *kaʔák (*k-aʔák) *to kick;* *kasúlʸ (*k-asúlʸ) *to rip with great force* (cf. *asúlʸ *to be ripped*); *kalwáx (*k-alwáx) *to break through with the foot.*

c- *to cause with the teeth:* *cakʸéw (*c-akʸéw) *to bite;* *capáq (*c-apáq) *to eat* (*green corn*) (cf. *kapáq *to crush soft object under foot*); *canʸé (*c-anʸé) *to chew on* (cf. *kanʸé *to press down lightly with the foot*); *catóq (*c-atóq) *to suck.*

c- *to cause a bunch of objects:* *caʔúlʸ (*c-aʔúlʸ) *to carry bunch of objects in the hand* (cf. *taʔúlʸ *to carry in the hand*); *caδú·n (*c-aδú·n) *to dip bunch of small objects* (cf. *taδú·n *to dip small object*); *caʔór (*c-aʔór) *to put bunch of objects on top* (cf. *taʔor *to put on top*).

c- generalized causative: *cayá· (*c-ayá·) *to send* (cf. *ayá· *to go*); *caváw (*c-aváw) *to lay down small object;* *canálʸ (*c-análʸ) *to lose* (cf. *análʸ *to drop off*); *camí/camé (*c-amí/c-amé) *to lay down long object.*

t- *to cause* (*general*), *to cause by means of an instrument:* *tasúlʸ (*t-asúlʸ) *to gouge* (cf. *asúlʸ *to be ripped*); *tayú·š (*t-ayú·š) *to cool* (cf. *ayú·š *to be cool*); *taqʷeraqʷér

[3] Other cases of a similar order will be found in the discussions of reduplication of the verb stem (**36**) and reduction of theme (**42**).

[4] See also **37**.

(*t-qʷeraqʷér) *to sharpen to a point* (cf. *qʷeraqʷér (< stem *aqʷér) *to be sharp-pointed*); *tapóm (*t-apóm) *to burn something* (cf. *apóm *to burn, be burning*).

šat- (used[5] as the equivalent of t-, given above): *šatʔanʸóym (*šat-ʔanʸóym) *to insult* (cf. *ʔanʸóym *to be ugly*); *šatva·ʔá·c (*šat-av < a· > ʔá·c) *to support in walking, to help someone walk* (cf. *avʔá· *to walk*); *šatma·xáy (*šat-ma < a· > xáy) *to raise to young manhood* (cf. *maxáy *to be a young man*, *tama·xáy *to raise to young manhood*); *šatma·ðá·v (*šat-ma < a· > ðá·v) *to make difficult* (cf. *maða·v *to have trouble with, to be in difficulties*, *tama·ða·v *to make difficult*).

š- *to cause a small object, to cause with the hand, to cause with a small instrument:* *šalwáx (*š-alwáx) *to punch a hole with the finger* (cf. *k-alwáx *to kick a hole through*); *šaréq (*š-aréq) *to hold, grasp;* *šakʸéṭ (*š-akʸéṭ) *to pick (cotton)* (cf. *akʸéṭ *to break off*); *šaxoraxór (*š-xoraxór) *to break into small pieces* (cf. *xoraxór *to be in small pieces*).

a·- *to cause a long object:* *a·vkʸéw (*a·-avkʸéw) *to carry long heavy object;* *a·ʔúlʸ (*a·-aʔúlʸ) *to carry long object in the hand* (cf. *t-aʔúlʸ *to carry in the hand*); *a·ðú·n (*a·-aðu·n) *to insert long object into cavity.* With numeral themes, the prefix a·- has a special significance: *a·ʔašént (*a·-ʔašént) *to do once;* *a·xavík (*a·-xavík) *to do twice* (cf. *taxavík *to double, to increase to two*); *a·xamók (*a·-xamók) *to do three times* (cf. *taxamók *to increase to three*); *a·cu·mpáp (*a·-cu·mpáp) *to do four times;* *a·sa·ráp (*a·-sa·ráp) *to do five times;* *a·xu·mxú·k (*a·-xu·mxú·k) *to do six times;* *a·pa·xkʸé· (*a·-pa·xkʸé·) *to do seven times;* *a·si·pxú·k (*a·-si·pxú·k) *to do eight times;* *a·xamxamók (*a·-xamxamók) *to do nine times;* *a·ša·xú·k (*a·-ša·xú·k) *to do ten times.* Compare also: *a·nʸó (*a·-anʸó) *to repeat, to do again* (cf. *canʸó *to copy, imitate*); *a·lʸu·vév (*a·-lʸu·vév) *to divide in halves* (cf. *lʸu·vév *to be equal to, even with*).

u·- *to cause or induce a condition without altering the nature of the object:* *u·ðí· (*u·-aðí·) *to bring* (cf. *aðí· *to come*); *u·vatáy (*u·-vatáy) *to exaggerate* (cf. *vatáy *to be big*, *tava·tá·y *to increase*); *u·ráw (*u·-aráw) *to do quickly* (cf. *aráw *to be fast*); *u·toxatóx (*u·-toxatóx) *to make spots on* (cf. *toxatóx *to be spotted*). With numeral themes the prefix u·- has a special significance: *u·cumpá·p (*u·-cu·mpá·p)[6] *to divide in four parts;* *u·sa·ráp (*u·sa·ráp) *to divide into five parts;* *u·xu·mxú·k (*u·-xu·mxú·k) *to divide into six parts;* *u·pa·xkʸé· (*u·-pa·xkʸé·) *to divide into seven parts;* *u·si·pxú·k (*u·-si·pxú·k) *to divide into eight parts;* *u·xamxamók (*u·-xamxamók) *to divide into nine parts;* *u·ša·xú·k (*u·-ša·xú·k) *to divide into ten parts;* *u·ʔašín·t (*u·-ašín·t) *to arrange singly* (cf. *taʔa·šín·t *to separate from one another, to arrange singly*); *u·xavá·k (*u·-xavá·k) *to arrange in pairs;* *u·xamú·k (*u·-xamú·k) *to arrange by threes;* *u·cu·mpá·p (*u·-cu·mpá·p) *to arrange by fours;* *u·sa·rá·p (*u·-sa·rá·p) *to arrange by fives;* *u·xu·mxú·k (*u·-xu·mxú·k) *to arrange by sixes;* *u·pa·xkʸé· (*u·-pa·xkʸé·) *to arrange by sevens;* *u·si·pxú·k (*u·-si·pxú·k) *to arrange by eights;* *u·xamxamú·k (*u·-xamxamú·k) *to arrange by nines;* *u·ša·xú·k (*u·-ša·xú·k) *to arrange by tens.*

a·c- causative(?): *a·camanʸé· (*a·c-manʸé·) *to relish* (cf. *manʸé· *to be sweet*); *a·cmanamá·n (*a·c-manamá·n) *to roll over and over* (cf. *manamán *to go up and down* < *amán *to arise*); nʸam-*a·clʸu·vév (nʸam-*a·c-lʸú·vév) *to match against something* (cf. *lʸu·vév *to be equal*).

[5] While šat- occurs in a few words in the speech of all speakers, it is said to be characteristic of the Algodones dialect. Themes with prefix šat- appear to be more elegant than the corresponding themes in prefix t- and are used in funeral speeches and on similar occasions.

[6] This and the following six themes are usually quoted with a prefix nʸi·-; which, however, is probably not an adhering prefix but the plural pronominal object prefix nʸi·-. The theme *u·cu·mpá·p is unusual. There seems to be no explanation for the ablaut of the vowel.

a·c- is sometimes used alternatively with u·c-: *a·cu·ðósk/u·cu·ðósk (*a·c-a < u· > ðósk/*u·c-a < u· > ðósk) to *load someone* (cf. *aðósk *to carry a load*); *a·cu·pís/u·cu·pís (*a·c-a < u· > pís/*u·c-a < u· > pís) *to give suck* (cf. *apís *to suck*); *a·cu·pílʸ/u·cu·pílʸ *to perform someone's last request* (cf. *u·pílʸ *to make a last request*).

u·c- causative (esp. with numerals): *u·caxavík (*u·c-xavík) *to divide in two parts;* *u·caxamók (*u·c-xamók) *to divide in three parts;* *u·clʸu·vév (*u·c-lʸu·vév) *to divide in halves* (cf. *lʸu·vév *to be equal*).

v- *to do in standing position:* *vapéṭ (*v-apéṭ) *to stand in the way* (cf. *tapéṭ *to cover*); *vašáw (*v-ašáw) *to guard;* *vakʸá·v (*v-akʸá·v) *to walk around* (cf. *cakʸá·v *to place objects around*); *vé·m (*v-é·-m) *to move back (standing)* (cf. *é· *to be in motion*).

m- *to do on account of* (?): *manʸúv (*m-anʸúv) *to fight over something* (cf. *anʸúv *to fight with someone*); *maxán (*m-axán) *to admire;* *mašaðé (*m-ašðé) *to fear;* *mašaráy (*m-ašráy) *to be angry.*

m- (probably different from the preceding m-): *maðílʸ (*m-aðílʸ) *to make thick-mush corn-bread;* *maxú·lʸ (*m-axú·lʸ) *to roast corn.*

n- (used chiefly in kinship terms): *namúy (*n-amúy) *to call someone mother's younger sister;* *napí· (*n-apí·) *to call someone father's sister;* *nakʷí· (*n-akʷí·) *to call someone mother's brother;* *nakʸíc (*n-akʸíc) *to call someone grandmother's brother* (cf. *akʸíc *to call someone sister's grandchild* (m.s.).

n- (probably different from the preceding n-): *namák (*n-amák) *to leave behind;* *naqám (*n-aqám) *to touch;* *namí·l (*n-amí·l) *to coax, urge, agitate.*

nʸ- (?): *nʸu·wíc (*nʸ-u·wíc) *to own;* *nʸaváy (*nʸ-aváy) *to inhabit;* *nʸakús (*nʸ-akús) *to call someone father's brother.*

xʷ- *to do in a hostile manner:* *xʷanʸó·v (*xʷ-anʸó·v) *to dodge, to flinch;* *xʷaʔá·v (*xʷ-aʔá·v) *to be jealous.*

x- (?): *xavá·ṭk (*x-avá·ṭk) *to scratch in dirt (bird);* *xalʸqíc (*x-alʸqíc) *to grab small object;* *xamí· (*x-amí·) *to be born.*

s- (?): *samxáy (*s-amxáy) *to rub lightly;* *sakʷalʸxé (*s-kʷalʸxé) *to tie a knot;* *samá·v (*s-amá·v) *to borrow;* ya-*saʔán (ya-*s-aʔán) *to be impotent, sterile.*

kʷ- (?): *kʷí· (*kʷ-í·) *to give;* *kʷakʸé (*kʷ-akʸé) *to ask for;* *nʸam-*kʷamá·yv (nʸam-*kʷ-amá·y-v) *to go into exile.*

p- (?) (occurs in only one theme): *pakʷén (*p-akʷén) *to carry by a handle.*

qʷ- (?) (occurs in only one theme): *qʷalayéw (*qʷ-layéw) *to be, become morning.*

var- (?) (occurs in only one theme): *varapí· (*var-apí·) *to call someone brother's child* (w.s.) (cf. *napí· *to call someone father's sister*).

kʷar- (?) (occurs in only one theme): *kʷaraʔák (*kʷar-aʔák) *to be an old man.*

sanʸ- (?) (occurs in only one theme): *sanʸaʔák (*sanʸ-aʔák) *to be an adult woman.*

kʷan- (?) (occurs in only one theme): *kʷanamí· (*kʷan-amí·) *to be brave.*

38. Compounding of prefixes. The prefix-stem theme may contain two prefixes. Compound prefixes may be divided into two categories: u·- plus some other prefix; all other combinations.

The following examples illustrate combinations of u·- plus another prefix: *u·kaspúk (*u·-k-aspúk) *to curl someone up* (cf. *kaspúk *to curl (self) up*); *u·caqáw (*u·-c-aqáw) *to feed (fruit)* (cf. *caqáw *to eat (fruit), to break a hollow brittle object with the teeth;* *u·takanáy (*u·-t-kanáy) *to provide a stopping place* (cf. *takanáy *to stop over*); *u·šaréq (*u·-š-aréq) *to make someone hold something* (cf. *šaréq *to hold, grasp*); *u·vaðúk (*u·-v-aðú-k) *to place something facing towards here* (cf. *vaðúk *to face towards here*); *u·mašðéy (*u·-m-ašðé-y) *to warn somebody away from something, to proscribe* (cf. *mašaðé *to fear*); *u·nʸu·wí·c (*u·-nʸ-u·wí·c) *to allot* (cf. *nʸu·wíc *to own*); *u·xamí· (*u·-x-amí·) *to procreate* (cf. *xamí· *to be born*); *u·sakʸév (*u·-s-akʸév) *to fill half full* (cf. *sakʸév *to be half full*); *u·kʷí· (*u·-kʷ-í·) *to buy* (cf. *kʷí· *to give*); *u·pakʷén (*u·-p-akʷén) *to give (object with*

handle) *to someone to carry* (cf. *pakʷén *to carry by a handle*); *u·kʷanamí· (*u·-kʷanamí·) *to make someone brave* (cf. *kʷanamí· *to be brave*); *u·sanʸa?ák (*u·-sanʸ-a?ák) *to impregnate, to make an adult woman out of* (cf. *sanʸa?ák *to be an adult woman*); nʸi·-*u·ná·m (nʸi·-*u·-n-á·m) *to value highly* (cf. nʸi·-*ná·m *to be very, to be exceedingly, to be important, valuable.*

Following is a complete list of other compound prefixes: *taqʷalayéw (*t-qʷ-layéw) *to do all night* (cf. *qʷalayéw *to become morning*); *a·sakʸév (*a·-s-akʸév) *to fill half full* (cf. *sakʸév *to be half full*); *a·šakʸínʸ (*a·-š-akʸínʸ) *to poke up fire;* *a·šaplól (*a·-š-aplól) *to flip long object with stick;* *a·šayá· (*a·-š-ayá·) *to poke stick into hole;* *a·šu·kʷé (*a·-š-u·kʷé) *to accuse, slander;* *a·šu·ðúlʸ (*a·-š-a < u· > ðúlʸ) *to conceal* (*person*) (cf. *taðúlʸ *to hide in the hand*); nʸi·-*a·taqʷér (nʸi·-*a·-t-aqʷér) *to follow close behind;* *a·taxʷínʸ (*a·-t-axʷínʸ) *to kindle fire;* *u·cavašáw (*u·c-v-ašáw) *to post a guard* (cf. *vašáw *to guard*); *macac?í/macac?é *to weep* (plu.) [analysis of this is difficult: probably it is a theme conjugated for distributive object from a non-existent unconjugated theme *maca?í/maca?é (*m-c-a?í/a?é)].

39. Stem modification in prefix-stem themes. The stem, as in most of the examples already cited, usually undergoes no changes when incorporated in a prefix-stem theme. In some circumstances, however, modifications of the stem occur.

39.1. When t-, š-, c-, or šat- is prefixed to the stem, an element <a·> may be infixed before the consonant immediately preceding the accented vowel of the stem: *ta·šáy (*t-a<a·>sáy) *to fatten* (cf. *ašáy *to be fat*); *tama·ðó·lʸq (*t-ma<a·>ðó·lʸq) *to sweeten* (cf. *maðó·lʸq *to be sweet*); *taxva·šu· (*t-xava<a·>šú·) *to make blue* (cf. *xavašú· *to be blue*); *tamsa·?í· (*t-masa-<a·>?í·) *to make muddy* (cf. *masa?í· *to be muddy*); *ša·síl ʸ (*š-a<a·>síl ʸ) *to cause* (*leaves*) *to fall* (cf. *asíl ʸ *to fall* (*leaves*); *ša·yér (*š-a<a·>yér) *to scale small object through the air* (cf. *ayér *to fly*); *šaxala·kúy (*š-xala<a·>kúy) *to spur* (*horse*), *to arouse* (cf. *xalakúy *to be happy, to rejoice*); *ca·táqš (*c-a<a·>táqš) *to flip* (cf. *atáqš *to jump*); *ca·yér (*c-a<a·>yér) *to fly* (*kite*) (cf. *ayér *to fly*); *ca·túyv (*c-a<a·>túyv) *to cause to become pregnant* (cf. *atúyv *to be pregnant*); *šatma·xáy (*šat-ma<a·>xáy) *to raise to young manhood;* *šatma·ðá·v (*šat-ma<a·>ðá·v) *to make difficult;* *šatva·?á·c (*šat-av<a·>?á·c) *to support in walking.*

Irregular, but to be compared with the preceding, is *ta·všú· (*t-a<a·>všú· ?) *to undercook* (cf. *avšú· *to be raw*).

The accented vowel may be concurrently ablauted: *ta·ní·x (*t-a<a·>ní·x) *to do quietly* (cf. *anéx *to be quiet*); *ta?a·qó·l (*t-?a<a·>qó·l) *to lengthen* (cf. *?aqól *to be long*); *ta?alʸa·qʷá·q (*t-?alʸa<a·>qʷá·q) *to make bitter* (cf. *?alʸaqʷáq *to be bitter*); *šat?ana·qú·r (*šat-?ana<a·>qú·r) *to cut into small pieces* (cf. *?anaqór *to be small* (plu.), *to be in small pieces*).

In some cases the stem appears in prefix-stem themes in two parallel forms, one unmodified, the other with <a·> insert; the <a·> insert often lends an implication of action performed slowly or in the process of occurring: *ta?apílʸ (*t-?apilʸ) *to heat something* (*quickly*), *ta?a·pílʸ (*t-?a<a·>pílʸ) *to heat something* (*slowly*); *ta?aqʷés (*t-?aqʷés) *to make yellow,* *ta?a·qʷés (*t-?a<a·>qʷés) *to paint yellow;* *ta?anʸéw (*t-?anʸéw) *to cause to vanish,* *ta?a·nʸéw (*t-?a<a·>nʸéw) *to cause to vanish;* *ta?anéx (*t-?anéx) *to weigh something,* *ta?a·néx (*t-?a<a·>néx) and *ta?a·ní·x (*t-?a<a·>ní·x) *to make something heavy.*

The <a·> insert occurs preceding a reduplicated stem in a few prefix-stem themes: *ta·mu·samú·s (*t-<a·>mu·samú·s) *to rub* (*sand*) *into, shake* (*sand*) *off;* *ca·ma·lʸmá·lʸ (*c-<a·>ma·lʸmá·lʸ) *to rub briskly between the palms;* *ka·winʸawínʸ (*k-<a·>winʸ-awínʸ) *to shake a long limp object;* compare,

however, *šatara·ʔí·r (*šat-ʔira<a·>ʔí·r ?) *to make (man's hair) kinky* (cf. *ʔira ʔír *to be kinky*).

39.2. In themes with a·c- or u·c- prefix, an element <u·> may be infixed before the consonant immediately preceding the accented vowel of the stem. Following is a complete list of such cases: *a·cu·pís/u·cu·pís (*a·c-/u·c-a<u·>pís) *to give suck* (cf. *apís *to suck*); *u·cu·yó·y (*u·c-a<u·>yó·-y) *to show* (cf. *ayú· *to see*); *a·cu·ðóšk/u·cu·ðóšk (*a·c-/u·c-a<u·>ðóšk) *to give someone a load to carry* (cf. *aðóšk *to carry by a tumpline*); *a·cvu·kʸéw/u·cvu·kʸéw (*a·c-/u·c-av<u·>kʸéw) *to make someone carry a long heavy object in the hand* (cf. *a·vkʸéw (*a·-avkʸéw) *to carry a long heavy object in the hand*); *u·cxu·pálʸ (*u·c-ax<u·>pálʸ) *to put something into someone's belt* (cf. *caxpálʸv (*c-axpálʸ-v) *to carry bunch of objects in the belt*); *a·cpalu·pál (*a·c-pala<u·>pál) *long objects stand in a row;* *a·ckolu·kól (*a·c-kola<u·>kól) *to lay long object on top of other.*

Compare also: *takolu·kól (*t-kola<u·>-kól) *to lay small object on top of other, to stack (dishes)*; *a·šu·ðúlʸ (*a·-š-a<u·>ðúlʸ) *to conceal (person)* (cf. *taðúlʸ *to hide in the hand*).

39.3. When u·- is prefixed to a stem containing an unaccented i·, the i· may change to u·: *u·xu·pán (*u·-xu·pán) *to bring near* (cf. *xi·pán *to be near*); *u·kʷ-asʔu·ðí· (*u·-kʷasʔu·ðí·) *to make into a doctor* (cf. *kʷasʔi·ðí· *to be a doctor*); maṭ-*u·xʷu·šá·yv (maṭ-*u·-xʷu·šá·yv) *to make wonderful* (cf. maṭ-*kʷi·ša·yv *to be wonderful, excellent*).[7]

But compare: *u·si·pxú·k (*u·-si·pxú·k) *to divide into eight parts* (cf. *si·pxú·k *to be eight*).

39.4. Some stems add a final consonantal increment -c when occurring in prefix-stem themes: *tašmác (*t-ašmác) *to put to sleep* (cf. *ašmá *to sleep*); *kacpác (*k-acpác) *to drive out* (cf. *acpá *to emerge*); *šapaʔi·páyc (*š-paʔi·páyc) *to make into a human being* (cf. *paʔi·páy *to come to life*); *šatva·ʔá·c (*šat-av<a·>ʔá·c) *to support in walking* (cf. *avʔá· *to walk*); *tamanʸé·c (*t-manʸé·c) *to sweeten* (cf. *manʸé· *to be sweet*).

39.5. A few stems add an initial consonantal increment when occurring in prefix stem themes. Following is a complete list.

Stem with k- increment: *anʸó in *a·nʸó *to do again, to repeat* *a·kanʸó (*a·-kanʸó), *to do again, to repeat,* (used alternatively with *a·nʸó); *anʸó in *canʸó *to copy, imitate,* *cakanʸó (*c-kanʸó) *to follow different trails* (used only with plural subject); *aðú/aðó in *vaðúk *to stand facing towards here,* *vaðóm *to stand facing towards there,* *u·kaðóm (*u·-kaðóm) *to point (animal) towards there*; *axáv *to enter,* *u·kaxáv (*u·-kaxáv) *to overtake;* compare also: *takxáv (*t-akxáv) *to bring in.*

Stem with lʸ- increment: *awí·š *to be bent, twisted (tree)*, *kalʸawí·š (*k-lʸawí·š) *to twist (grass) into a coil, into a bunch.*

Stem with l- increment: *atúyv *to be pregnant,* *kʷalatú·y *to be paunchy.*

40. Developed themes. A simple-stem theme or prefix-stem theme may be further developed in two ways.

40.1. By infixation of an element <u·> before the consonant immediately preceding the accented vowel of the stem plus suffixation of a thematic suffix -v/-p.[1] The meaning of the developed theme is then *to be one who does . . .* or *to have been doing . . .*: *u·šúcv (*a<u·>šúc-v) *to have a younger brother* < *ašúc *to call someone younger brother;* *ku·nácv (*k-a<u·>nác-v) *to be one who orders* < *kanác *to order, summon;* nʸi·-*a·tu·qʷérv (nʸi·-*a·-t-a<u·>qʷér-v) *to be a follower, to have been following* < nʸi·-*a·taqʷér *to follow;* wi·-*a·vu·kʸáwv (wi·-*a·-av<u·>kʸáw-v) *to have a paternal half-*

[7] The change from kʷ to xʷ in this case is unique.

sibling < wi·-*a·vkʸáw *to call someone paternal half-sibling.*

Irregular, but within this category, is *cu·nʸú·v (*c-a<u·>nʸú·-v) *to be a copier, imitator* (cf. *canʸó *to copy, imitate*).

40.2. By infixation of an element <i·> before the consonant immediately preceding the accented vowel of the stem plus suffixation of a thematic suffix -v/-p.[8] The meaning of the developed theme is *to be worthy or capable of doing . . . or having . . . done to one:* *a·cqi·ðá·yv (*a·c-aq<i·>ðá·-y-v) *to be slippery* (cf. *a·caqðá·y *to slip*); wa-*ni·mí·lv (wa-*na<i·>mí·l-v) *to be a nuisance* (cf. *namí·l *to coax, urge*).

The accented vowel of the stem may be concurrently ablauted: *maši·ðé·v (*m-aš-<i·>ðé·-v) *to be fierce, dangerous* (cf. *mašaðé *to fear*).

The stem may be further modified by addition of a consonantal increment -c: *a·cxi·núcv (*a·c-ax<i·>núc-v) *to be contagious* (cf. *a·xnó *to become infected*); *xi·nú·cv (*ax<i·>nú·c-v) *to be contagious* (cf. stem *axnó in *a·xnó *to become infected*).

Probably to be included within this category are two month names.

ʔaccaci·vá·k[9] *July* (*planting month*). Probably translatable as *things are to be planted* < ʔac- *things* + *caci·vá· *to be plantable* (*several*) (analyzable as *c-a<c>-<i·>vá· < *cacvá· *to plant several*, distributive object theme conjugated from *caváw *to plant*) + -k present-past.

ʔavá ši·pí·ṭ[9] *October* (*month for making winter houses*). Probably translatable as *houses to be covered, shut* < ʔavá *house*, ši·pí·ṭ *coverable* (analyzable as *š-a<i·>pí·ṭ < *šapéṭ *to cover, to shut*). The winter house itself is called ʔavá šu·péṭ *house which is covered, shut*, šu·péṭ *that which is covered, shut* being the gerund of *šapéṭ *to cover, shut.*

Two other themes within this category present certain difficulties in analysis.

walʸ-*ci·vá·ma (probably contracted form < walʸ-*c-a<i·>vá·m-p-ma, walʸ-* . . . -ma being the privative affix complex[10]) *to find* (*task*) *impossible* (*to do*), *to find* (*person*) *impossible* (*to persuade*) (cf. *cavá·m *to probably not be able* and walʸ-*cavá·ma (also a contracted form < walʸ-*c-avá·m-ma) *to be not equal to* (*a task*).

*ki·náp *to be famous* (probably contracted form < *k-a<i·>náv-v-pa < *kaná·pa < *kaná·vpa (*kaná·v *to tell, relate* with intensive thematic suffix -pa. The meaning may then be more literally given as *worthy of being intensively told about.*)

The list of examples cited in this section contains all the cases in this category of themes.

40.3. With regard to the developed themes cited under **40.1.**, it may be pointed out that without the -v/-p suffix these themes are phonetically identical with the gerunds (verbal abstracts) of the themes from which they are derived. Since the gerund functions as a noun theme, it may be suggested that in the formation of developed themes of this type we have a parallelism with the method of derivation of verb themes from noun themes described in **32.** The -v/-p suffix which occurs in these developed themes may be identical with the suffix -v *to be possessed of* occurring in verb themes derived from noun themes by affixation of nʸ-·. . . -v.

The same interpretation may be advanced tentatively concerning the developed themes cited under **40.2.** In view of the absence of the -v/-p suffix in the two month names ʔaccaci·vá·k and ʔavá ši·pí·ṭ, it may be suggested that infixation of <i·> ± vocalic ablaut is a process which is separable from suffixation of -v/-p. There is, however, no

[8] The suffix has the form -v when following vowels and most consonants, the form -p when following m or p.

[9] Note the absence of the thematic suffix -v/-p in both these cases.

[10] See **41.**

verbal abstract in <i·> ± vocalic ablaut.

41. Thematic suffixes. Thematic suffixes may be added to the theme at any level of development. Several kinds of thematic suffixes occur.

41.1. Directional suffixes are -k *towards here, towards self or speaker* and -m *towards there, away from self or speaker:* *acpá *to emerge, to be born, to grow (plant)*, *acpák (*acpá-k) *to come out*, *acpám (*acpá-m) *to go out;* *apák (*apá-k) *to arrive here* (dist. plu.), *apám (*apá-m) *to arrive there* (dist. plu.); *ašá·k (*ašá·-k) *to see (this here) from a distance*, *ašá·m (*ašá·-m) *to see (that in the distance) from here;* *té·k (*t-é·-k) *to bring something closer*, *té·m (*t-é·-m) *to move something away;* *a·páx (*a·-apáx) *to throw down*, *a·páxm (*a·-apáx-m) *to throw away.*

The -k directional suffix takes the *aδú form and the -m directional suffix the *aδó form of the stem *aδú/aδó (*to be facing towards*): *vaδúk (*v-aδú-k) *to face towards here*, *vaδóm (*v-aδó-m) *to face towards there.*

The -m directional suffix takes the -é form of stems in -í/é: *kamí/kamé (*k-amí/é) *to bring*, *kamém (*k-amé-m) *to bring there.*

The -m directional suffix takes the *awé and *ayé forms of the stems *awá·/awé and *ayá·/ayé: *awá·/awé *to go, depart*, *awém (*awé-m) *to go away;* *ayá·/ayé, *to go along*, *ayém (*ayé-m) *to go away.*

41.2. Medio-passive -v/-p[11] is found rarely with simple-stem themes, fairly frequently with prefix-stem themes: *á·mp (*á·m-p) *to be left over* (cf. *á·m *to pass by*) δam-*ayú·v (δam-*ayú·-v) *to be plain, manifest* (cf. *ayú· *to see*); *a·qʷétv (*a·-aqʷét-v) *to bump into* (cf. *a·qʷét *to beat, strike with stick*); *a·péxv (*a·-apéx-v) *to dress own hair in side coils* (cf. *a·péx *to dress other's hair in side coils*); *u·spérv (*u·-aspér-v) *to exert, strain self* (cf. *u·spér *to tie tighter*).

The medio-passive suffix takes the *xakʸé· form of the stem *xakʸí·/xakʸé·: *a·xakʸé·v (*a·-xakʸé·-v) *to cross over, pass across* (cf. *a·xakʸí· *to lay a long object across*).

Themes with prefix t- and the medio-passive suffix often have the meaning *to do while sitting*, and themes with prefix a- and the medio-passive suffix often have the meaning *to do while walking or lying.* Themes of these types form, together with themes containing a prefix v- *to do while standing*, a triad of themes in which position is indicated: *tapétv (*t-apét-v) *to sit in front of* (cf. *tapét *to cover*); *a·pétv (*a·-apét-v) *to lie in front of* (cf. *a·pét *to lay a long object in front of*); *vapét (*v-apét) *to stand in front of;* nʸam-*tacícv (nʸam-*t-acíc-v) *to sit behind;* nʸam-*a·cícv (nʸam-*a·-acíc-v) *to walk or lie behind or beside;* nʸam-*vacíc (nʸam-*v-acíc) *to stand behind or beside.*

The medio-passive suffix always follows a directional suffix occurring in the same theme: *té·kv (*t-é·-k-v) *to come closer (sitting)* (cf. *té·k *to bring something closer*); *té·mp (*t-é·-m-p) *to move away (sitting)* (cf. *té·m *to move something away*); *šaδómp (*š-aδó-m-p) *to go in that direction, to head towards there* (cf. *šaδóm *to face something towards there*).

In two cases a prefix-stem theme is formed by prefixation of u·- to a simple-stem theme which already contains the medio-passive suffix: *u·wámp (*u·-á·m-p) *to leave a remainder* (cf. *á·mp *to be left over*, v. supra); δam-*u·yú·v (δam-*u·-ayú·-v) *to explain, clarify* (cf. δam-*ayú·v *to be plain, manifest*, v. supra).

41.3. The benefactive suffix -y is suffixed to themes containing stems ending in a vowel or in w (and perhaps y) but not to themes containing stems ending in any other consonant. The accented stem vowel may or may not be ablauted.

Without ablaut: *xalʸkʷá·y (*xalʸkʷá-y) *to hunt for someone* < *xalʸkʷá· *to hunt;*

[11] -v occurs after vowels and most consonants, -p after m and p.

*tará·y (*t-ará·-y) *to light fire for someone* < *tará· *to light fire;* *aδáwy (*aδáw-y) *to get for someone* < *aδáw *to take, get;* *vašáwy (*v-ašáw-y) *to guard for someone* < *vašáw *to guard.*

With ablaut: *acá·y (*acá·-y) *to put down a bunch for someone* < *acé *to lay down a bunch;* *awé·y (*awé·-y) *to do for someone* < *awí/é *to do;* *kamé·y (*k-amé·-y) *to bring for someone* < *kamí/é *to bring;* *aštó·y (*aštó·-y) *to gather for someone* < *aštú/ó *to gather.*

Benefactive -y occurs compulsorily in some themes with u·- prefix and in one with u·c- prefix. The accented vowel may or may not be ablauted.

Without ablaut: *u·šéy (*u·ašé-y) *to name someone after something* < *ašé *to name;* *u·mašδéy (*u·-m-ašδé-y) *to warn someone away from something, to proscribe* < *mašaδé *to fear;* *u·šamá·y (u·-š-amá·-y) *to empower, to confer power on* < *šamá· *to dream;* al^{y}-*u·vakamé·y (al^{y}-*u·-v-kamé·-y) *to set on the edge* < al^{y}-*vakamé· *to stand on the edge;* *u·só·y (*u·-asó·-y) *to feed (meat)* < *asó· *to eat (meat).*

With ablaut: *u·má·y (*u·-amá·-y) *to feed* < *amá *to eat;* *u·tak^{w}á·y (*u·-t-ak^{w}á·-y) *to cure, revive* < *tak^{w}é *to awake;* *u·sé·y (*u·-asé·-y) *to give to drink* < *así/é *to drink;* *u·xnó·y (*u·-axnó·-y) *to infect,* cf. *a·xnó (*a·-axnó) *to become infected;* maṭ-*u·pó·y (maṭ-*u·-apó·y-y ?) *to pretend to be dead* < *apúy *to die;* wi·-*u·vsó·y (wi·-*u·-avsó·-y) *to curse* < wi·-*avsú· *to be accursed;* *u·cu·yó·y (*u·c-a<u·>yó·-y) *to show* < *ayú· *to see.*

41.4. The suffix -m *to be able* occurs in only five themes, all of the simple-stem type: *a?ém (*a?é-m) *to be able to say* (cf. *a?í/é *to say*); *awém (*awé-m) *to be able to do* (cf. *awí/é *to do*); *aδóm (*aδó-m) *to be able to do, be* (cf. *aδú/ó *to do, be*); *ayúm (*ayú-m) *to be able to see* (cf. *ayú· *to see*); *a?ám (*a?áv-m) *to be able to hear* (cf. *a?áv *to hear*).

41.5. The suffix -nt *for a reason* (?) occurs only with the stem *aδú/ó *to do, be* and the substantive prefix ka- *what?*: ka-*aδúnt (ka-*aδú-nt) *to do why?* (e.g., ka·δúntək aδú·m *why did he do it?* lit., *he-does-why does-he do?*).

41.6. A thematic suffix -v, possibly comparable to the -v/-p suffix found in developed themes, occurs in three themes, accompanied by ablaut of the accent stem vowel: *ax^{w}í·v (*ax^{w}í·-v) *to be odorous* < *ax^{w}é *to be odorous;* *k^{w}ak^{y}á·v (*k^{w}-ak^{y}á·-v) *to ask for things* < *k^{w}ak^{y}é *to ask for something;* *cakak^{w}í·v (*c-kak^{w}í·-v) *to ask questions, to ask for information* < *cakak^{w}é *to ask, to question.*

41.7. Intensive -pa occurs with simple-stem and prefix-stem themes: *ašmápa (*ašmá-pa) *to be sound asleep*); *a?épa (*a?é-pa) *to have certainly said* (cf. *a?í/é *to say*); *aδópa (*aδó-pa) *to have certainly done* (cf. *aδú/ó *to do, be*); *kaná·pa (*k-aná·v-pa) *to tell all* (cf. *kaná·v *to tell*); *a·ví·rpa (*a·-aví·r-pa) *to finish completely* (cf. *a·ví·r *to finish*); *ta?a·lá·ypa (*t-?a<a·>lá·y-pa) *to spoil completely* (cf. *ta?a·lá·y *to spoil* < *?ala·y *to be bad*).

Intensive -pa occurs following -m *to be able* in two themes: *a?émpa (*a?é-m-pa) *to tell the truth* (< *a?í/é *to say*) (e.g., ?a?empək ?akaná·vxa *I will tell the truth,* lit., *I-say-truly I-will-tell*); *awémpa (*awé-m-pa) *to do outright* (< *awí/é *to do*) (e.g., awémpək tapúyk *he killed him outright,* lit., *he-does-outright he-kills-him*).

41.8. Privative -ma occurs with all types of themes. An adhering prefix wal^{y}- is usually found with themes containing privative -ma: wal^{y}-*á·rma (wal^{y}-*á·r-ma) *to have no desire for* (cf. *á·r *to desire*); wal^{y}-*a?áma (wal^{y}-*a?áv-ma) *to pay no attention to* (cf. *a?áv *to hear*); wal^{y}-*aδóma (wal^{y}-*aδó-ma) *to be unable* (cf. *aδú/ó *to do, be*); wal^{y}-*ta?a·lá·yma (wal^{y}-*t-?a<a·>

lá·y-ma) *to not spoil* (cf. *ta?a·lá·y *to spoil*); walʸ-*ci·vá·ma (walʸ-*c-a<i>vá·m-p-ma) *to find (task) impossible to do* (cf. *cavá·m *to probably not be able*).

Privative -ma unaccompanied by the adhering prefix walʸ- is probably to be found in the following themes: *u·manéxma (*u·manéx-ma) *to be unable to lift* (poss. cf. *?anéx *to be heavy*); *šamáma (*š-amá-ma ?) *to be unlucky* (poss. cf. *šamá· (*š-amá·) *to dream*).

42. Reduction of theme. The verb themes cited above are used with pronominal prefixes and tense, aspect, tense-modal, and modal suffixes. Many themes occur in a reduced form which takes no nonthematic affixes but is used with an auxiliary verb (generally a form of *a?í/é *to say*) in which affixes occur. The reduced theme plus auxiliary verb has a momentaneous meaning.

Simple-stem themes of the stem type v́c are not modified phonetically when reduced: én a?í·m *it shakes, shivers;* éq a?í·m *it stops suddenly (running)*.

If the theme begins in a short vowel followed by a single consonant, the vowel is dropped in the reduced form: láw a?í·m *he turns his head (quickly)*. Compare δo·láwk (< δo- + zero- 3d pers. + *aláw *to turn the head* + -k present-past) *he turns his head;* šáṭ a?í·m *straight down he comes*. Compare tašáṭk (< zero- 3d pers. + *t-ašáṭ *to set upright* + -k present-past) *he sets it upright;* xʷí·r a?í·m *long object comes slowly out*, compare u·xʷí·rək (< zero- 3d pers. + *u·-axʷí·r *to draw out* + -k present-past) *he draws long object out of matrix*.

If the theme begins in a short vowel followed by a consonant cluster, a long vowel, or a consonant, the reduced form is the same phonetically as the full form: aklét a?í·m *it rises on its hind legs;* a·δé·v a?í·m *aside he moves*, compare a·δé·vək (< zero- 3d pers. + *a·-aδé·-v *to step aside* + -k present-past) *he steps aside;* vaδóm a?í·m *he turns halfway around*, compare vaδómək (< zero- 3d pers. + *v-aδó-m *to face towards there* + -k present-past) *he faces towards there, he turns halfway around*.

A number of reduplicated stem themes which occur only in this construction must be considered reduced themes: la·xalá·x a?í·m *it flashes intermittently*, compare lá·x a?í·m *it flashes;* manamán a?í·m *it goes up and down;* xʷeɬaxʷéɬ a?í·m *it makes a popping noise;* saqasáq a?í·m *he is itchy*.

The reduced theme sometimes occurs with an adhering prefix: nʸi·xáɬ (nʸi·-*xáɬ) a?í·m *it falls apart;* nʸi·xú· (nʸi·-*xú·) a?í·m *they make a confused noise;* alʸqéš (alʸ-*qéš) a?í·m *it is malleable* (poss. cf. *a qí·š (*a·-aqí·š) *to make a mark on*); nʸi·teqatéq (nʸi·-*teqatéq) a?í·m *he feels prickly*.

The reduced theme sometimes occurs with the accented stem vowel ablauted. The implication in the majority of cases is of slow or gradual action. The contrast is sometimes with another reduced theme, sometimes with a theme that takes nonthematic affixes. Following is a complete list: má·n a?í·m *it rises up suddenly*, compare amánək *he arises;* ší·q a?í·m (*star*) *falls, describes a long horizontal line*, compare šéq a?í·m *it is in a thin line on the horizon;* aklí·t a?í·m *it rises slowly on its hind legs*, compare aklét a?í·m *it rises on its hind legs;* ašnʸí·cq a?í·m (*rain, wind*) *gradually ceases*, compare ašnʸícq a?í·m (*rain, wind*) *ceases abruptly;* vaδú·m a?í·m *he changes position*, compare vaδóm a?í·m *he turns halfway around*, vaδómək *he faces towards there;* vaná·lʸ a?í·m *he steps aside*, vanálʸk *he stands off from it;* a·cxʷá·r a?í·m *they are all laughing*, compare a·cxʷérək *they laugh;* compare also: aškʷá·k a?í·m *he is stepping*, compare kaškʷék *he takes a step*.

WESTERN MIWOK TEXTS WITH LINGUISTIC SKETCH

L. S. FREELAND

BERKELEY, CALIFORNIA

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4. The Stealing of Hawk's Wife

0. The Miwok Indians occupied a considerable portion of central California. Their territory was not continuous, but consisted of two quite distinct areas. The eastern, and much larger, area covered the western slope of the Sierra Nevada mountains from south of Yosemite Valley north to the Cosumnes River, and extended westward toward San Francisco Bay far enough to include a part of the valley of the San Joaquin. The smaller western division covered the land north of San Francisco Bay along the coast past Bodega Head. It includes also a little area in the hills of the Coast Range south of Clear Lake.[1] The eastern and western divisions of the Miwok seem for a long time to have been without contact or knowledge of each other, and between them lies the lower valley of the Sacramento, inhabited by the Wintun.

The languages spoken by the eastern and the western Miwok, while showing a closely similar lexicon, present a very different picture from the point of view of structure. That of the Sierra Miwok is a highly organized language of the inflectional type. That of the Coast Miwok is comparatively simple, and its main interest lies in the twofold character that it exhibits. For while structural peculiarities are still left that are clearly old, and date back to a period of linguistic development common to both divisions, these are relatively meager, and a trend toward a new type of fusional technique has already set in.

1.1. The symbols used in the text are shown in Table I.

All these represent distinct phonemes, with the exception of s and x. The s appears to be simply a weak form of the glottalized affricative, ṫs. (Similarly the glottalized affricative ṫc has a tendency to be spoken as c, but c exists as a distinct phoneme as well.) The fricative x, (listed as palatal, but in reality variable in position according to the vowel preceeding it) is heard chiefly in one certain position in a word; that is, a number of stems that terminate in a vowel in their simple form show an x before various suffixes (though not all suffixes), and before other stems in composition (páwi *mountain*; pawíx-to' *on the mountain*; hú·ni *to relate*; hú·nix-mi' *relate thou!*). Comparison with other dialects

[1] The text given here is in the dialect spoken by this small group of Miwok living in the hills of the Coast Range. I first worked with this group in 1922, when quite a number of Miwok were still living. The text was obtained from a middle-aged woman, Maggie Johnson, who is married to a Pomo. It was analysed with the help of her daughter and son-in-law, and later checked with other informants.

makes it appear probable that this sound represents an s that has disappeared from the simple form of these stems. As far as the morphological processes are concerned, these stems are usually treated as though they ended in a consonant, but there is some inconsistency about it.

TABLE I

Consonants

	Labial	Dental	Alveolar	Palato-Alveolar	Palatal	Glottal
Stops						
Sonant.....	b	d	ḍ			
Intermediate ..	p	t	ṭ		k	
Glottalized		t̓	ṭ̓		k	'
Affricatives						
Intermediate ..		ts		tc		
Glottalized		ts̓		tc̓		
Fricatives						
Surd.....		(s)		c	(x)	h
Nasals						
Sonant.....m			n			
Laterals						
Sonant.....			l			
Aspirated.....			L			
Semi-vowels ..... w				y		

Vowels

u o a e i

The material indicates that the series of stops are defective, no sonant palatal having been noted, and no glottalized labial. Informants differ in their use of the series (ṭapá·ṭi, or dapá·ṭi, *to slam*). Older individuals appear to be more scrupulous about glottalization than the young. This is interesting in view of the fact that there is only one series of stops in the eastern dialects of Miwok.

Only two nasals appear here, the palatal nasal present in the eastern dialects having been assimilated to n.

The aspirated lateral is extremely rare.

Consonant clusters occur only in medial position.

As regards the vowels, i and u are close in quality when long. When short, and especially when unstressed, they tend to be more open. Some individuals use the open quality of u (that of English pull) where others use the close quality (English pool). Both e and o are open. The a is like French chat, rather than English father.

Both consonants and vowels occur as short and long sounds, the two lengths being phonemically distinct. Various pairs of words can be found that differ only in length of sounds (kúle *bear;* kúl·e *wife;* wí·wa *gruel;* wíw·a *grapevine*).

1.2. As in all dialects of Miwok, the long syllable is a conspicuous and important factor in word and sentence rhythm. A long syllable is one that contains either a long vowel, or a short vowel followed by two consonants or a long one; for example laki *to dance*, is short short; yomta *shaman*, how·o *to sit*, li·law *to speak*, are long short. This seems to be the standard duration of a long syllable, and vowels phonemically long normally become short in actuality when a suffix or even a following word causes them to be followed by two consonants.

In the eastern dialects of Miwok, word accent must of necessity fall on a long syllable, and either the first or the second syllable of every word is long and stressed. Manipulation of these lengths and stresses, together with metathesis, is used in that language, as a grammatical process, important in creating the various forms of the verb stem (the verb *to roll* having, for example, the stem forms hút·el-, huté l·-, huté·l-, hútle-). Only a few vestiges of such a practice are left in the Coast Range dialect, all in forms that are obviously old. For instance, such shifts of stress involving loss of phonemic length occur in terms denoting numerals ('ukú·koṭsi *ten* < úk·u *hand;* 'oṭá·koṭs *two persons* < 'oṭa *two*). Also in verbs formed

by the use of certain ones of an old series of suffixes expressing concepts of Voice, the verb stem appears in a form resembling the second stem form in verbs of the eastern dialects. ('onín·uka *to bring* < 'ó·ni *to come;* liláwne *to address* < lí· law *to speak*).

The present rhythmic trend of the language is quite different, however, and in all processes of the recent level long vowels and consonants are fixed, and long initial syllables such as those in 'ó·ni and lí·law retain their stress when suffixes or other increments are attached to the stem.

1.3. In the Coast Range dialect, in contrast to the eastern dialects, there are many dissyllabic stems with no long syllable. Given alone, these normally have initial stress (láki *to dance;* lókol *to get wood,* 'óle *coyote,* náwa *old man*). When followed, however, by any syllabic increment (which may be a suffix, a stem in composition, or some logically quite unrelated element) such stems tend to undergo a lengthening of the second syllable together with a shift of stress' (lakí·ṭak *dancer;* lokó lmiṫso' *get wood, all of you!;* 'olé·nawa *Coyote Old Man*). In the first and third example, syllabic length is arrived at by the lengthening of a vowel ordinarily short; in the second example by the fact that two consonants are brought together. As is shown by the third example, it is also true that stems occurring in second position in composition may lose stress. Stems used habitually in second position tend to acquire weak forms, and to take on in greater or less degree the character of suffixes.

It is this type of rhythmic treatment that accompanies all the grammatical processes of the recent level, as well as the use of older suffixes in so far as they have kept enough vitality to be free moving.

2.1. As in all Miwok dialects, suffixation is the outstanding grammatical process. Stem changes involving metathesis and shifts of length and stress are present, but occur only with certain old suffixes and appear to be vestiges of an earlier type of grammatical procedure. The vocabulary offers examples of reduplication in various patterns, but there is little indication that this is a vital process. A few cases suggest that there is some use of vocalic and consonantal variation.

The most conspicuous processes are of a type not found in the inflective eastern dialects. The lack of techniques for expressing relational ideas completely within the word makes necessary a certain amount of dependence on word-order, and this fixity in the order of words leads to loose types of stem-composition. Many transitional elements occur, some of which are clearly weak forms of stems, some, apparently, being modal or adverbial particles. Such elements are, for the most part, suffixed rather than prefixed, thus following the old patterns of Miwok morphology.

2.2. A group of final suffixes in the noun serve, by their presence or absence, to distinguish a series of cases. This system of cases shows similarities to that in the eastern dialects both in concepts and in the elements used to express them. Here, however, the case suffixes are reduced to zero in certain instances. Also, they occur here only in the noun, not in the modifier.

The forms differ somewhat according to whether the noun stem terminates in a vowel or in a consonant.

TABLE II

	Stems Ending in a Vowel	Stems Ending in a Consonant
Predicative Case	0	0
Subjective and Genitive	-n	0
Objective	-ṫs	-uṫs
Reduced Objective	0	-u, -o
Locative	-to', -ṭ	-to'
Ablative	-m	-mu
Instrumental	-ṭu	-ṭu
Comitative	-ni	-ni
Vocative	0, or shift in length and stress	0

With demonstrative stems and in certain other old forms various irregularities in case formation appear. When the strong form of the locative suffix is used with demonstrative stems, the t is long (nét·o' *here;* dót·o' *over there;* mát·o' *at the place mentioned*). Instead of -ṭu, an old instrumental suffix, -cu (still used freely in the eastern dialects) appears (má·cu *by its means*). An old locative suffix, -m (not to be confused with the ablative), replaces the usual locative ending in expressions formed by the derivational suffix -wa, -a, -ca (dó·ca-m *on the other side;* ní·ca-m *on this side;* wál·iwa-m *on the land side;* kaní na-m *on the north side*).

The cases are used as follows:

The predicative case, in the absence of a verb, has predicative value (dó·do hóypu *that is the chief;* 'ó̱ṭ·a-wékwek *there are two hawks.*)

The subjective and genitive cases are formally the same (hóypu-n wé·yi *the chief's house;* hóypu-n wé·ṭa *the chief departs*). This does not give rise to any confusion of meaning in the sentence, however, since a noun in the genitive case always preceeds the noun designating the object possessed, while the position of the subject noun is free.

The objective case may denote either the direct or indirect object of a verb, and is used adverbially to express duration of time. In statements or questions, the object of the verb, either direct or indirect, is normally in this case except when it immediately preceeds the verb. In commands, both direct and indirect objects are in this case regardless of position ('iṭi-ṫs wáyan ma·-ṫs *to him give that!;* 'úlki-ṫs kán·i-ṫs wáyan *mush me give!*).

The reduced objective case is used where an object immediately preceeds a verb, unless this is an imperative form (wátmay-u móyi *duck he hunts;* although móyi wátmay-uṫs *he hunts duck;* ní· -'awa 'é·ya *this place he likes;* although ní· -'awa-ṫs hé l·a 'é· ya *this-place not he likes*).

The locative case expresses primarily the idea of location in space or in time (tú·le-t *inside;* 'áw·e-t *on the morrow*). It can also express the end of motion ('íṭi-t *at him;* yomí·-to' *to the village*). To give the idea of *toward, in the direction of,* the locative suffix is associated with other elements, -pa-, and walimpa- (wál·in-pa-t *onto land;* 'á·la-walimpa-t *eastward;* hí·n-ukán-pa-t *until sundown*).

The ablative case expresses motion away from, or out of (wúw·e-m *from the river;* pawíx-mu *from the mountain;* má·-hinte-m *hence, from now on*).

The instrumental case is primarily used to denote the instrument with which an action is performed ('úk·u-ṭu *with the hand;* tumáy-ṭu *with a stick*). Used with verbs stems, the suffix -ṭu denotes purpose rather than means (kó·ci-ṭu wé·ṭa *to play hand game he goes*).

The comitative case expresses accompaniment ('iṭí·-ni *with him;* 'úlki koná·ku-ni *mush with roast meat*).

The vocative case should perhaps not be regarded as a separate case at all, since ordinarily the absolute form is used in address. However, in certain relationship terms a shift of stress can be definitely heard when these are used in address, the shift sometimes even involving loss of phonemic length (papá· *grandfather!;* 'unú· *mother!,* from pá·pa *grandfather,* and 'ún·u, *mother*).

2.3. There is an old pluralizing element, ko-, which appears in all Miwok dialects, occurring often in numerals and in pronominal forms. In Coast Range Miwok, it is used currently in plural pronominal forms, and in pluralizing personal nouns, or demonstrative stems when these refer to persons ('uṭél-ko *white people* < 'úṭel *possessing magic power;* dók·o *those people* < dó· demonstrative stem of distant reference). In line with the newly developed concept of duality (discussed in connection with the pronouns), a dual form, -koṫs, has been formed from the plural (putú·-koṫs *two children;* mák·oṫs *two people; the two of*

them < má· demonstrative stem of indefinite reference). Sometimes these elements have actually personalizing force, as in the term yomí·-ko *the people of a village* < yómi *village;* or when used with verbal stems, as in koyá·-koṫs *two singers* < kóya *to sing*, or in 'elám·ukcumti-koṫs *two people who are reciprocally siblings.*

Some of the cases in the dual and plural personal nouns and pronouns are formed differently from the corresponding cases in nouns. These variations apparently are needed to avoid confusion and duplication in forms that would result from the similarity of the dualizing element, ṫc, to the objective case suffix.

TABLE III

	Plural	Dual
Predicative Case	-ko	-koṫs
Subjective and Genitive	-kon	-koṫs
Objective	-kono	-koṫsiṫs
Reduced Objective	-ko	-koṫsi

2.4. The independent pronouns are as follows:

TABLE IV

	Singular	Plural	Dual
First Person	kán·i	ma·	'óṫs·i
Second Person	mí·	mí·ko	mí·koṫs
Third Person	'i·	'i·ko	'i·koṫs

The occurrence of a dual form in all persons is interesting. No duals are present in the eastern Miwok dialects, but the distinction between inclusive and exclusive is sharply marked by the existence of two separate stems in the first person plural; ma, first person plural exclusive, and 'itc·u or 'otc·i, inclusive. In the western dialects, apparently, the inclusive stem has been re-interpreted as a dual, and analogous dual forms have been developed for the second and third persons, while the idea of inclusive as against exclusive has been lost.

Cases other than the subjective and genitive may be formed from these stems, the plural and dual forms involving the pluralizing suffix, -ko-, following the same rules as those given for case in plurals and duals of nouns. Objective forms, for example, are as follows:

TABLE V

	Singular	Plural	Dual
First Person	kán·iṫs, kán·i	má·	'óṫs·i
Second Person	mí·	mí·kono	mí·koṫsi
Third Person	'iṭiṫs, 'iṭi	'i·kono	'i·koṫsi

2.5. The subjective and genitive case of pronouns is supplied by another series:

TABLE VI

	Singular	Plural	Dual
First Person	ka, 'ik, k	ma	'iṫs, s
Second Person	'in, n	mon	moṫs, mos
Third Person	'iti (genitive only)	kon	koṫs, kos

These are weak elements and their place in the sentence is fixed: as subjective forms, they immediately preceed the verb; as genitive forms, they immediately preceed the noun denoting the object possessed.[2] Only in one person (the third singular) is there any distinction between the subjective and the genitive form. In this person, subjectivity is either not indicated, or is indicated by the use of the independent pronoun, 'i·, while possession is indicated by the procliticelement 'iṭi which is similar to the objective case in the independent pronoun.[3]

[2] Although these pronominal elements are preposed to the word with which they have a logical relation, they do not appear to be on the point of developing into suffixes. For they ordinarily attach themselves more closely to a preceding word, when this is present, than to the following one (háyu-n kapé·ṭi, "You are losing the dog," "dog-thou lose"; hayú·-moṫs kapé·ṭi, "You two are losing the dog.")

[3] Although a formal distinction between possession and subjectivity exists only in this one form, it should perhaps be taken as an indication that the two patterns are not felt to be the same. However, the fact that the verb in Coast Miwok is treated almost entirely like a possessed noun is interesting. In the eastern Miwok dialects, the subjunctive mode (both dependent and independent forms) is treated in this way, while indicative forms have a quite different treatment. It may be that here, only the one pattern has remained.

These elements are very similar to a series found in the eastern Miwok dialects which denotes possession. There, however, the elements are not preposed, but suffixed.

2.6. In the western Miwok dialects, suffixed pronominal elements are found only in the imperative forms of the verb. The elements exhibit dual forms analogous to those already given in the independent and proclitic series. There are two series of these suffixed pronouns, one used with verbs stems ending in a vowel, the other with stems ending in a consonant:

TABLE VII

	Stems Ending in a vowel	Stems Ending in a Consonant
Singular	-n	-mi'
Plural	-nʧso'	-miʧso'
Dual	-nʧsoʦ	-miʧsoʦ

At first glance, these elements look as though they might be recent extensions in use of the second person singular elements of the proclitic and the independent series. In reality, however, they are probably remnants from the older linguistic horizon. The appearance of a final glottal closure in singular imperative forms and of the phoneme tc or ts in plural imperative forms occurs repeatedly in the eastern dialects.

2.7. The distinction in the use of these two series of imperative pronominal elements is a formal one, in that it is dependent on the termination of the verb stem (wé·ṭa-n *go!;* but 'éts-mi' *go to sleep!*). Examination of the two groups of verbs, however, shows that a greater number of active verbs falls in the first group, and a greater number of inactive or medio-passive verbs falls in the second. It is possible that we have here a remnant of the dual classification of verbs as active versus inactive, a distinction which is a basic factor in the conjugation patterns characteristic of the eastern dialects.

2.8. There are quite a number of suffixes that appear frequently in Coast Range Miwok, attached to the verb stem and expressing various concepts of voice: reflexive, reciprocal, benefactive, causative, and the like. These suffixes are obviously old. They occur also in the eastern Miwok dialects, where they are integrated with the complex treatment of the verb according to verb classes. In those dialects, each voice suffix has an affinity for a special form of the verb stem and necessitates a special pattern of conjugation. In the Coast Range dialects, on the other hand, these elements are simple derivational suffixes, and in so far as they are still vital and free-moving, are affixed to a verb stem in accordance with the rhythmic shifts that operate at present. In old and crystallized forms, however, these elements can often be noted associated with obsolete forms of a verb stem, forms still in current use in the eastern dialects. For example, the reflexive suffix, -po, occurs at times suffixed to a form of the verb stem in which length and stress of the initial syllable is achieved by the use of metathesis ('ókya-po *to come to life* < 'ókay *to create, to bring to life;* 'úkna-po, (*the sun*) *sets*, or (*the world*) *approaches winter* < 'úkan *to go in*).

The voice suffixes noted most frequently are the following. The asterisk indicates that the element occurs also in the eastern dialects in much the same form and meaning: * -n·uka, -nuka causative; * -ne benefactive; * -pa indirective; * -po reflexive; * -mti reciprocal; * -kce medio-passive; * -ce, -ci medio-passive;[4] -ṭi addative (also a fixed element in many active verbs); -ṭa intensive; -tuka, -tuk- meaning not determined; -te passive or medio-passive.

These elements are not mutually exclusive, but may occur in combination with each other, as in talá·tukce *to rise* < ta·l·a *to stand*, or in ṭápcetuka *to slam shut of itself;* ṭapá·ṭi *to slam*.

Verbs formed by the use of these suffixes appear to be all treated as vowel-ending stems as far as the formation of the imperative is concerned, with one exception. The

verbs having the passive suffix, -te, are given the terminal fricative breath and treated like consonant-ending stems (tsaté-x-mi' *lie thou!;* láktex-mi' *be thou named!*).

2.9. Examples occur of a few other derivational suffixes that appear to be old and well-established, but that fall into no clear cut series.

-wa, -a, -ca *side*, a suffix used with stems denoting points of the compass or other spatial ideas ('á·la-wa *the east side* < 'á·la *east*; wál·i-wa *the outside* < wál·i *world;* hú·ke-wa *front* < hú·ke *first*). The weak form, -a, appears with stems ending in a consonant (kaní·n-a *the north side;* kánin *north;* 'oló·m-a or 'oló·-wa *the south side* < 'ólom *south*). The form -ca occurs only with demonstrative stems (dó·-ca *the far side;* ní·-ca, *the near side*).

-tak, -ak, an agentive or participial suffix with verb stems (koyá·-tak, *a singer* < kóya, *to sing;* 'elá·-tak *a player* < 'éla *to play;* hítš·uw-ak *a runner* < hítš·uw *to run*). This element may have a passive meaning (malá·k-ak *painted* < málak *to paint*).

-ak, -k, a verbalizing element used with noun stems, *to possess* (cú·t-ak *to have eyes, to possess eyesight* < cú·t, *eye;* mí·w-ak *to marry a man* < mí·w *husband;* kúl·e-k *to marry a woman* kúl·e *wife;* yómi-k *to dwell* < yómi *village, community*)

-n·uka, -nuka, a suffix that appears in descriptive terms (yomún·aka *beautiful, fine,* < yómu *to laugh;* yóltsinaka, *poor, pitiable,* < yóltsi *to pity*). One example suggests that this element may come from an old verb stem, nak- *to reach*, which is still used in the eastern dialects (kolón·aka *extending to the feet,* < kólo *foot*).

2.10. In the eastern dialects of Miwok, the complete expression of relational ideas within the word makes wide variation in word order quite possible. And in the western dialects, the persistence of case in the noun still leaves a certain amount of freedom of position. In certain constructions, however, the order of words is fixed, and here the tendency toward compounding is seen most clearly.

2.11. The modifier, since it lacks case suffixes, must for the sake of clearness be closely associated with the noun. It preceeds the noun, and is loosely compounded with it (tsóy·a-kó·tsa *a live person;* 'ót·a-hé·na *two young men*). The presence of compounding is more evident in cases where the stem of the modifier contains no long syllable, and therefore exhibits the characteristic shift in stress with lengthening of the second syllable or else may lose stress entirely ('adé·-wé·yi *a big house;* 'obú·-kó·tsa *a bad person;* kule-kó·la *Bear Girl;* laki-yómta *a dance shaman*). Compounding is most evident when both stems lack a long syllable, and the only prominence in the composite form is the secondary one on the second syllable ('adé·-wiki *big fire;* tsetáw-nawa *white old-man*).

This process is entirely free and occurs all the time, but there are also many permanent words in the vocabulary that have obviously been formed in this way (komé·-nawa *month*, literally *moon old man;* kowúx-kówpum *middle finger*, from kówu *middle* and kówpum *finger;* tamál-pawi *Mount Tamalpais*, literally *west mountain*, from támal, *west* and páwi *mountain*). The majority of place names are of this type, and many animal names.

2.12. The position of a noun in the genitive case is no more free than is that of the noun modifier; it always preceeds the noun to which it refers (wé·yi-n pukú·ya *top of the house*, literally *house's top;* wíki-n tú·le *the midst of the fire*). The two terms in such phrases are not compounded freely as are the noun and modifier, but tend to maintain their own character without shifts of stress (páwi-n kówu *the middle of the mountain;* not pawí-n-kowu). Nevertheless, many nouns in common use are clear

cases of a possessive phrase that has actually been compounded, and in these, shifts of stress occur where they are phonetically indicated (lume-n-tsokó·ko *bobwhite*, literally *fir's quail;* koló-n-kówpum *toe*, literally *foot's finger;* kolo-n-layá·ki *ankle*, literally *foot's wrist*).

This type of composition is important to recognize, since a number of elements that are transitional to suffixes follow this pattern, in that they are attached to what appears to be the genitive case of the stem.

2.13. Noun stems that appear habitually in second position in composition tend to assume the character of suffixes. Some such stems, having no long syllable, are normally unstressed in second position; others develop weak forms. Elements of this type that occur frequently are: -yomi *village, community*, in place names; -'ala, -ala, -la, < 'alwa *tree*, in names of plants; -wal·i, -wali *world, region* < wál·i *the world, the out-of-doors, dry land* (lí·le-wal·i *the Sky World, Heaven;* 'á·la-wal·i *the east world, the east*).

Some elements appear to have originated from adverbial particles, rather than noun stems: -'aye *indeed, only, on the other hand* (mí·'aye *Thou indeed*, kán·i-'aye *I, on the other hand*, lopúk-'aye *nothing but mud*). -ce, cewa, *time, occasion* (as in 'oṭóṭ·a-ce *four times*), probably connected with cewi *again;* -caka *being like, appearing to be*, appended to the genitive form of stems (kán·i-n-caka *like me;* koló-n-caka *what appeared to be tracks* < kólo *track*). This element occurs as an independent modal particle *as it were;* -pa-, followed by the locative case suffix, -t, a directional element, *to, onto, toward*, following the genitive case of nouns (má-n-pa-t *to that place*, yomí-n-pa-t *toward home*). In fixed terms, the nasal is assimilated to the labial position (dómpat *away*); -walimpat, a directional suffix evidently composed of -wal·i, -wali *region* and -pat, the preceeding element, *in the direction of* (kík-walimpat *toward the water;* lí·le-walimpat *upward;* 'á·la-walimpat *eastward*).

2.14. Prefixation is not a process characteristic of any Miwok dialect, and even in the fusional tendencies of the Coast Range dialect there is very scant indication that such a process is on the point of developing. Even the preposed pronominal elements cannot be regarded as transitional to prefixes, since they fuse with the preceeding word more often than with the following word to which they refer. There are at least two stems, however, that show weak forms in first position: huna-, an element indicating possession, *one's own*, corresponding to the suus of Latin. This is clearly a weak form of the stem húna *each, oneself, alone* (huná·-tika (*her*) *own basket;* hunalám·a (*his*) *own ceremonial house*); kuci-, diminutive < kúc·i, kúc·i *little, a little one* (kuci-kó·la *little girl;* kuci-hé·na *little boy*).

2.15. Composition does not occur freely in the verb as it does in the noun. Doubtless it is checked by the fact that a pronominal element so frequently intervenes between object and verb, or between two associated verbs. Nevertheless, while some of the transitional suffixes used with verbs appear to be derived from modal particles, others probably are from verb stems. The following elements occur frequently in the text:

-wel·ak, -welak, desiderative or volitional future, probably comes from a verb stem related to wél·e *to make a wish* (ma-limá·-ṭi-welak *we will go to look*. mát·o-k talí·-welak *there may I wake*.)

-ma, probably a modal element expressing immediacy or emphasis. It may be suffixed to other words, but most frequently follows a verb and has the value of a present (ka-'ánwaṭi-ma *I am leaving now;* wíkits 'an wulá·-ma *fire somebody is stealing!*)

-weno, quotative. This is a modal element that may occur independently anywhere in a sentence, and may be suffixed to nouns or adverbs (as in 'ekál-weno *then-*

it is said). It is frequently suffixed to the verb (yomík-weno *dwell, it is said;* 'ukán-weno *he went in, they say.*)

-miṭi, connective linking two verb forms, *and, and so,* may be independent or suffixed to the verb (takáx-miṭi 'úte *toppled over backward and fell down*).

-tuma, suffixed to noun stems, is translated as *to become* (kó·tsa-tuma *to become people;* tumáy-tuma *to become sticks*). Used with verb stems, -tuma appears to have the value of an inceptive (mat yów'ituma *there he pointed;* 'iṭi lú·tituma *took him in her arms*).

-'enay, -enay, -ena, -na, expressing simple futurity, is an element used very frequently. It does not occur independently, but is undoubtedly derived from an adverb, 'ena-t, or 'ena-y *soon,* still in use in the eastern dialects. This element is attached to the genitive case of the stem (dó·cam ka-cukú-n-'enay *on the other side I shall be.* tsáket hí·-n-enay *always there will be sun.* 'í·koṫsi-ṫs welík-na *we two will catch the two of them.*)

-tem·a, expressing potentiality, is also attached to the genitive case of a stem (pidá·ṭi-n-tem·a *to be able to succeed;* té·min-tem·a *to be able to think;* 'á·wi-n-tem·a *to be capable of packing it*). The element -tem·a occurs as an independent expression translated as *that's all right,* or *Okey.*

Two elements occurring often with verb stems and serving to nominalize them should especially be noted, since they constitute an important subordinating device:

-'ó·ni, -o·ni *he who, the one who.* This element is phonetically similar to the verb stem 'ó·ni *to arrive,* but is probably related rather to a suffix -'uni *he who,* in the eastern dialects. yó·k-ó·ni *the one who died;* wé·ṭa-'ó·ni *the one who came*). It may also be used with noun or demonstrative stems (né·-'o·ni *this one;* 'udí·-'o·ni *the old one*).

-hinte, the omnipresent stem which, when used independently may mean *thing, something, what, to do something, to do what,* is frequently attached to verb stems, and has the meaning of *that which* (wulá·-hinte *that which was stolen;* pó·ye-hinte *what is put about the neck, a necklace;* lotsók-hinte-t *at the place where it happened* < lótsok *to happen*).

2.16. Many modal particles occur throughout the text. Some of these were noted only in an independent use; others at times attach themselves to stems. The more important ones are these:

cúw·e *may it be that,* an introductory word in magic formulae or expressions of a wish. The following verb usually has the volitional element, -wel·ak, attached to it (cúw·e máyis také·-wel·ak *may the corn come up!*).

cuwá, an introductory word in negative commands. (Imperative verb forms are used only for positive commands.) The verb following is just an ordinary verb form (cuwá mat·o-n wé·ta *do not there thou go!*)

wé·y, an introductory word in hortatory expressions, first person (wéy-ma 'ánwaṭi, *let us all return!*).

mú·, or watse-mú·, or watse . . . mú·, *it must be that* (watse kon-célpi mú·, *they must be afraid!*)

ya, or a, an element that is not required, but often appears at the close of questions. It usually gives the impression of being suffixed (hínteka·tu· ka-'okáy-ya *how do I do it?* < 'ókay, *to do, to make*).

'é·, a terminal particle, probably emphatic (ka-'áckay 'é·, *I'm angry!*).

ka·ṭu·, an element that expresses manner rather than mode. The last syllable may be the instrumental case suffix, -tu. (má·ka·ṭu· *in that manner, by that means;* hínteka·ṭu·, ka·ṭu·-hínte *how*).

'unu, 'un, -un *but that.*

'ak *but.*

3. The Story of the Two Shamans[4]

yónsbil kon-yómik. [*Yountsville they-live*

[4] The text is not given phonemically. In order to clarify grammatical analysis, case-suffixes and transitional elements have been separated by hyphens from the stem, and stems in composition have been marked off in the same way

(plural).] ken·e-kó·la-n yó·k. [*One-girl-*(subj.) *die.*] mát·o' 'ó̱t·a-hé·na 'ekal 'iṭi-'át·a-ko̱ts mák·o̱ts huna-'ów·a ko̱ts-hekbá·ṭi miṭi ko̱ts-wé·ta. [*There two-young men then her-elder brother-*dual *they* (dual) *their-younger sister they* (dual)*-mourn and they* (dual)*-go away.*] kén·e-n 'á·la-walimpat wé·ṭa, kén·e-n kanín-walimpat wé·ṭa. [*One-*(subj.) *east-toward go, one-*(subj.) *north-toward go.*] 'á·la-walimpat wé·ṭa-'ó·ni-n yó·k, kanín-walimpat wé·ṭa-'ó·ni-n 'óp·oy. [*East-toward go-the one who-*(subj.) *die, north-toward go-one who-*(subj.) *travel on.*]

'ekal mat kúle-kó·tsa pólpol-mu táke. [*Then there Bear-People lake-from emerge.*] 'ekal má·-ṭáy pólpol-lemén-to' hów·o, miṭi 'í·kon-o háypa. [*Then that-man lake-end-at sit, and them await.*] kó·tsa-n koló-n-caka 'uṭé·-miṭi wá·yik ku̱ṫcúy-kolo wá·yik 'adé·-'aye. [*People's track's-the like see-and some* (*were*) *many little-track some big-on the other hand.*] 'ekal má·-ṭáy háypa-weno kén·e-'umé·ni 'ó̱ṭ·a-hí. [*Then that-man wait-it is said one-night two-day.*] kúle-kó·tsa-n ma-m táke, 'ekál-weno 'áde-n hú·ke táke, 'ekal kú̱ṫcuy tóp·a táke. [*Bear-People-*(subj.) *there-from emerge, then-it is said big one-*(subj.) *first emerge, then little ones after emerge.*] 'ekal kúle-kó·la má·-ṭáy 'ácwani, 'ekal 'iṭi wélik, má·-ṭáy wélik kúle-kó·la-n. [*Then Bear-Girl that-man address, then him seize, that-man seize Bear-Girl-*(subj.).] 'ekal 'iṭi wé·nuka, pólpol-to' 'iṭi 'ú·ne. [*Then him make go, lake-into him drag.*] 'ekal 'iṭi huna-wé·yi-to' 'onín·uka. [*Then him her-house-into make come.*] 'ekal 'iṭi 'á·ta-weno, 'ekal 'iṭi-kulú·mu mú'e wanú·ke mu'é·-kulú·m-u wán-ku̱ṭa, miṭi 'iṭis pút·e cíka, miṭi cáme. [*Then him cut open-it is said, then his-bone-*(obj.) *all remove all-bone-*(obj.) *remove completely and to him down* (obj.) *stuff, and sew up.*] 'ekal 'iṭi 'ókay. [*Then him bring to life.*] 'ekal 'iṭi mí·wak, 'ekal 'iṭí·-ni yómik. [*Then him take for husband, then him-with live.*]

'ekal má·hintem táke wál·i-npat. [*Then thence emerge land-ward.*] 'ekal huna-'elám·u-hé·na líma, 'ekal mu'é·-walimpat wé·ṭa, mu'é·-walimpat líma huna-'át·a-ṫs. [*Then his-brother-young man seek, then every-direction go, every-direction seek his-elder brother-*(obj.).] 'ekal lí·le-walimpat wé·ṭa, 'ekal má·hintet 'ó·ni lí·le-wal·i-n-to'. [*Then up-direction go, then there reach Sky-World-to.*] 'ekal yomún·aka wé·yi, 'adé·-wé·yi. *Then beautiful house, big-house* (*there is*).] ma-n yolé·wa-s páka-n mén-hínte yomún·-aka-miṭi cúku. [*It's surrounding area-in-flower-*subj. *plentiful beautiful-and be.*]

'ekal ká·-t 'ó·ni, ká·-n wál·iwa-m tál·anika. [*Then door-to reach, door's outside-at stand-stop.*] 'ekál-weno: "hínte-n 'é·ya, pútu?" káca. [*Then-it is said: "What-thou wish, Child?" say.*] 'ekal: "ka-'át·a ka-yó·ne miṭi ka-'ó·ni." [*Then: "My-elder brother I-miss and I-come."*]

" 'á·la-wal·i-t, 'á·la-wal·i-t lóklo-n kowúx-to' kén·e-kó·tsa-n yó·k-tsáte, lák·o-yó·k." ["*East-land-at, east-land-at valley-of middle-in one-person-*subj. *dead-lie, thirst-die.*"]

" 'ow tém·a," káca, 'ekal 'ánwaṭi. ["*Oh, very well,*" *say, then return.*] 'ekal 'á·la-walimpat wé·ṭa. [*Then east-toward go.*] 'ekal 'úṭe, yó·k-ó·ni-t 'ó·ni. [*Then find, die-he who-to come.*] kulúm-'aye-n tené·ne. [*Bone-only-*subj. *be skeleton.*] 'ekal ma·-t 'ó·ni, miṭi huna-'át·a né·nut. [*Then him-to come, and his-elder brother recognize.*] 'ekal túmu, tumá·y-u yáh·e. [*Then haul wood, wood-*obj. *fetch repeatedly.*] 'ekal 'óka, miṭi 'ekal láki, hi·-n ukú·kotsi-ni káwul ukú·kotsi láki. [*Then make fire, and then dance, day-of ten night-*(*of*) *ten dance.*] 'ekal 'iṭi-'át·a-n welé·ṭi, welé·ṭi-ṭu tsókte. [*Then his-elder brother-*subj. *blink, blink-by means of come back.*] 'ekal huna-'át·a yúlkuṭi. [*Then his-elder brother raise up.*]

'ekál-weno kots-'ánwaṭi, 'ekal má·-m ko̱ts-tsókte yomí-npato'. [*Then-it is said they* (dual)*-return, then there-from they*(dual)*-come back home-toward.*] 'ekal yomí-t-ko̱ts 'ó·ni, kawúl-ko̱ts 'ó·ni. [*Then home-to-they* (dual) *reach, night-they*(dual) *reach.*] 'ekal hú·ni huna-'elám·u-ṫs ukán·uka. [*Then tell his-younger brother-*obj. *cause to enter.*] 'ekal láw-weno. [*Then refuse-it is said.*]

"mí·-'aye, 'ukán-mi'!" káca. ["*Thou-on the other hand, enter-thou!" say.*] 'ekal má· 'udí-'o·ni-n 'úkan. [*Then that one old-the one who*-subj. *enter.*] ká· wité·ṭi, miṭi tíka wanú·ke. [*Door* (obj.) *open, and screen of reeds remove.*] 'ekal 'iṭi-'ún·u 'iṭi lú·tituma, miṭi 'ekal 'iṭí·-ni nó·tsa. [*Then his-mother him embrace, and then him-with cry.*]

'ekal 'iṭi-caná·k-o 'ét·u-weno, huna-'ó·ni-n 'áw·entala, caná·k-o 'ét·u. [*Then his-pine tree*-obj. *climb-it is said, his-arrival-of following day, pine tree*-obj. *climb.*] 'ekal 'iṭi-kólo-n nówuk. [*Then his-leg*-subj. *break.*] 'ekal 'iṭi-'ún·u-n nó·tsa. [*Then his-mother*-subj. *cry.*] 'ekal: "lokól-miṭso'! [*Then: "Bring manzanita wood-all of you!*] má·te ka-lakí-n-enay." [*Later on I-dance-of-future."*] 'ekal kon-lokól-weno. [*Then they-bring manzanita wood-it is said.*]

'ekal kon-lám·a-t kon-úkan. [*Then their-ceremonial house-to they-enter.*] 'ekal 'i·-lakíx-weno, 'ekal 'iṭi kon-é·lu yónte-n yomí-to' 'ekal 'iṭi kon-célpi-weno. [*Then he-dance-it is said, then him they-watch Yount-of village-at then him they-fear-it is said.*] 'oṭóṭ·a-hi· láki, 'ekal nám·i-'úme lúp·u-húya 'é·ya, he· kayá·w-uṫs, he· kíw·a-ṫs, he· 'olú·t-uṫs, he· pé·so-ts. [*Four-day dance, then final-night heavy-beads* (obj.) *want, and tobacco*-obj., *and arrows*-obj., *and baskets*-obj., *and money*-obj.] lúp·u-húya hél·a 'iṭi kon-wáya; kuṫcúy-huya-ṫs 'iṭi kon-wáya. [*Heavy-beads* (obj.) *not him they-give; small-beads*-obj. *him they-give.*] 'ekal wíki-t molé·ṭi. [*Then fire-in pour.*] 'iṭi-cá·pa-n kolón·aka, 'ekal wíki-n tú·le-t tál·a wí·ṭi-miṭi, 'ekal hél·a tsú·p. [*His-hair*-subj. *reach to feet, then fire-of center-in stand stretch out arms-and, then not burn.*]

'ekal yónte-nawa-n 'ó·ni. [*Then Yount-old men*-subj. *arrive.*] hén·elálni 'óṭ·a-tsetáw-nawa·-koṫs célpi-weno, 'ekal 'iṭi kon-pelé·senuka, wét·e. [*Henelalni* (obj.) *two-white-old men*-dual (subj.) *fear-it is said, then him they-have put in jail, lock in.*] wét·e-t-weno, má·-hinte-m ké·la-táke, 'ekal wál·i-tál·a. [*Lock in-at-it is said, thence repeatedly-come out, then outside-stand.*] 'oṭóṭ·a-cewa koṫs-wét·e, 'ekal má·-m také·-miṭi wéno kó·tsa 'áyaw. [*Four-times they*(dual)-*lock in, then thence come out-and it is said people*(obj.) *call together.*] 'ekal huna-héw·e-t kíw·a tál·apo, miṭi 'ekal ma·-cu túwen. [*Then his-chin-in arrow*(obj.) *stick, and then that-with shoot.*] 'ekal má·-m wé·ṭa, miṭi lúp·u túwen. [*Then thence go away, and rock*(obj.) *shoot.*] má·-kíw·a-n, náṭi pólkoyak má·-kíw·a-n. [*That-arrow-of, woodpecker head feathers* (*is*) *feathering that-arrow-of.*] 'ekal kén·e-yó·k-'ó·ni-n 'ici·ca 'ánwaṭi, 'ici·ca, má·-lák·o-ṫs-yó·k-'ó·ni-n. [*Then one-die he who*-subj. *quickly come back, quickly, that-thirst*-obj. *-die-he who*-subj.]

'ekal má·-'uṭél-koṫs hél·a 'iṭi 'é·ya, 'iṭi koṫs-célpi. [*Then that-white man*-dual (subj.) *not him like, him they*(dual)-*fear.*] 'ekal: " 'ánwaṭi-n, 'ánwaṭi-n, ma-npat 'eké·-yi-'o·ni-hinte-m 'ánwaṭi-n!" [*Then: "Return-thou, return-thou, there-to place-arrive-what-from return-thou!"*] 'ekál-weno: " 'ów," káca. [*Then-it is said: "Very well," say.*]

'ekal kó·tsa 'ayów-weno, 'ekal, mu'é·walim wá·yikwa-yomi-ko-n hél·a 'ó·ni. [*Then people* (obj.) *assemble-it is said, then, everywhere-from some-village-they not arrive.*] 'ekal kon-wé·ṭa kó·tsa-ko-n, 'olé·-yomi-kó·tsa-ko-n wé·ṭa, 'ekal 'ó·ni kó·tsa-n. [*Then they-go people-they, Coyote-village-people-they go, then arrive people.*] " 'oṭóṭ·a-hí· ka-lakí-nenay." ["*Four-day I-dance-future.*"] 'ekal lakíx-weno. [*Then dance-it is said.*] ('ekal ka-há·ma-n wé·ṭa-weno, ka-há·ma-n kuci-kó·la-putu, 'ekal má·-kó·tsa 'elú·ṭi.) [(*Then my-grandmother*-subj. *go-it is said, my-grandmother*-subj. *little-girl-child, then that-person* (obj.) *go to see.*)]

'ekal láki. [*Then dance.*] 'ekál-weno kon-'é·lu 'an-láki. [*Then-it is said they-watch many-dance.*] telé·ka-hi· láki, 'ekal 'oṭóṭ·a-hi·, weno. [*Three-day dance, then four-day, it is said.*] húya-ṫs yáy·u tolá·-nakapo, lúp·u-húya-ṫs he· natí·-'olú·t-uṫs he· kíw·a-ts he· Loká·y-uṫs, tsami-Loká·y-uṫs, he· lúp·u yáy·u-weno, 'uṭél-ko-n lúp·u

yáy·u, 'uṭél-ko-n pé·so-ṫs. [*Beads*-obj. *demand have thrown at one, heavy-beads*-obj. *and woodpecker feather-baskets*-obj. *and arrows*-obj. *and blankets*-obj., *rabbit skin-blankets, and money*(obj.) *demand-it is said, white-people-of money*(obj.) *demand, white-people-of money*-obj.] 'ekal má·-'uṭél-koṫs lúp·u-ṫs pé·so-ṫs hóye 'adé·-wanteha-to', pál·a. [*Then that-white man*-dual (subj.) *money*-obj. *silver money*-obj. *put big-pan-into, fill up.*] 'ekal kó·tsa-'aye-n hél·a hóye. [*Then Indians-on the other hand*-subj. *not put.*] 'ekal: "mi·kono ka-liláwne-nenay." [*Then: "You*(obj.) *I-tell-future."*] 'ekal lí·law-weno. [*Then speak-it is said.*] 'ekal: "kó·tsa-ko-n hél·a-hinte-ṫs né·nut-enay, mon-tsá·m-enay," kacá·-weno. [*Then: "Indians*-pl.-subj. *not-anything*-obj. *know-future, you-be destroyed-future," say-it is said.*] " 'uṭél-ko-n li·le-npato' tsókte-nenay tsanéy-ko-n halí·hali nenút-ṭu wé·ṭa-nenay. ["*White-people*-subj. *sky-toward depart-future many-people*-subj. *variety of things* (obj.) *knowing-by means of go-future.*] kó·tsa-n yóltsinaka-nenay. ["*Indians*-subj. *pitiful-future.*] 'awé·tsuma· ka-lí·law ka-'ánwaṭi-ma," kacá·-weno. [*Be ended my-speaking I-leave-pr," say-it is said.*] kó·tsa-'eke-t mánti-n yó·k-enay-to', kán·is lí·law-miṫso'! [*People-wherever-among someone*-subj. *die-future-when, me tell about-you!*] makca-to' má·-kó·tsa-n hénkaṭi-nenay. [*Do thus-when that-person*-subj. *recover-future.*] ka-lákte pés-ta. [*My-name* (*is*) *Pesta.*] ka-wé·ṭa-ma. [*I-go-pr.*] 'ekal wíki-n tú·le-t 'úkan, miṭi má·tsú·p. [*Then fire-of center-into enter, and he burn.*]

The Story of the Two Shamans

They were all living at Yountsville. A young girl died, and there were left, then, two young men, her elder brothers. They grieved so much for their younger sister that they left that place and went away. One of them went east, and the other one went north. The one that went east died, the one that went north traveled on.

He came to the place where the Bear People come out from the lake. And there the man sat down at the end of the lake and waited for them. He saw tracks that looked like those of people, big ones there were, and many little tracks. And the man waited, they say, for one night and two days. And then the Bear People came out; the big ones came out first and the little ones came after. Then the man spoke to Bear Girl, and she caught hold of him, Bear Girl caught hold of him and carried him off, and she dragged him into the lake. And she brought him to her own house. Then she cut him open, they say, and she took out all his bones. All his bones she took completely out, and she stuffed him with down, and then she sewed him up. Then she brought him to life again, and married him, and they lived together.

But after a while, they say, he came out onto land again, and he looked for the young man his brother. Through all the world he went, through all the world he looked for his brother. Then he went upward, and he came there to the World Above. There, there was a fine house, a big house. Around it were flowers growing, many and fine ones.

He came to the door, and outside the door he stopped. Then, they say, "What do you want, Boy?" someone said to him. And he answered: "I long for my elder brother, that's why I've come."

"In the east, in the east, in the middle of a valley, a dead man is lying who died of thirst."

"Yes," said the man, and he went back. Eastward he went, and he found him, he came upon the one who had died. Nothing but bones he was, a skeleton. He went up to it and he knew it for his elder brother. Then he hauled wood, again and again he went after it. He made a fire and he danced, ten days and ten nights he danced. Then his elder brother, blinking, blinking, came back to life, and the younger brother raised him up.

Then they returned from that place and

came back toward home, and they reached home, at night they reached it. And he told his younger brother to go in. But he refused, they say. "You be the one, you go in," he said. And the elder one went in. He opened the door and took out the screen of reeds. Then his mother took him in her arms and they cried together.

Then, they say, the day after he got back he climbed his pine tree. And he fell down, they say, from the top of the tree, and his leg was broken. Then the younger brother said, "Gather manzanita wood, all of you! In a little while I am going to dance." And the people brought manzanita wood.

Then they all went into the ceremonial house, and the younger brother danced. And everybody watched him, there at Yountsville. And people were afraid of him, they say. For four days he danced, and then on the last night he asked for strings of bead money, and for tobacco, and for arrows, and for baskets, and for white-men's money. But the people did not give him these things, only small beads they gave him. And he was angry, and he poured them in the fire. Then his hair grew down to reach his feet, and he stepped right into the middle of the fire and stood there with his arms stretched out, and he did not burn.

Then the two old white men, the Yount brothers, got there, and they were afraid. They were afraid of Henelalni, the man who danced, and they had him put in jail. They locked him up, but every time they locked him up he got out, and stood on the outside. Four times they locked him up, and each time he got out, they say. Then he called the people together. He took an arrow and stuck it in his chin and shot it. He shot it with his chin. Then he went out and he shot a rock. The arrow he used was feathered with woodpecker head feathers. Then the brother who had died quickly, quickly, got well, the one who had died of thirst.

The two white men did not like him. They were afraid. "Go back! Go back there, to the place you came from!"

"All right," he said. Then he gathered together the people from all around. The people from some places never got there, but from everywhere the people were starting out. All the way from Coyote Valley the people were coming. Then at last they arrived, all the people. "Four days I shall dance!" he told them, and then he danced, they say. (My grandmother was there, they say. My grandmother was a little girl, and she went to see that man.)

Then he danced. And, they say, people watched, and many people danced. Three days, he danced. Then on the fourth day he asked to have beads thrown to him, strings of bead money, and feathered baskets, and arrows, and blankets, rabbit-skin blankets, and money, he asked for, white people's money, white people's silver money. Then the two white men took a big pan and filled it up with silver money for him. But the Indians put in nothing.

"I'm going to speak to you," he said, and he spoke. "Indian people are not going to be wise," he said. "You are all going to be destroyed. It is the white people who will go to the Sky World. There will be many peoples who will have wisdom of many kinds, but the Indians will always be pitiful people. That is all I have to say. I am going back now," he said. "But when there is someone among any of the people who is going to die, tell him about me, and he will get well. And I, I am called Pesta. Now I go."

And he stepped into the fire and was burned.

4. The Stealing of Hawk's Wife[5]

yom'k-weno 'olé·-nawa-n, wékwek-hóypu-n, koló·lo-hukuy, wíw·a-wékwek, cayíts-'ulá·wa, wí·cap-'ulá·wa, tsuyú·luk-'ulá·wa, tsí·lat-kó·la-kots, tú·le-yomi-to'. [*Live-it is said Coyote-Old Man*-subj., *Hawk-Chief-*

[5] See fn. 4.

subj., *Frog-Old Woman*(subj.), *Grapevine-Hawk*(subj.), *Bluejay-rascal, Robin-rascal, Hummingbird-rascal, Woodpecker-Girl*-dual (subj.), *Tuleyomi-at.*] 'ekál-weno mát-kon cúku. [*Then-it is said there-they be.*]

'ekál-weno, kon-láki, kon-láki 'oṭóṭ·a-hí· hélwa-má·yen háya. [*Then it is said, they-dance, they dance four-day Pelican-Queen puberty ceremony.*] tsáket kon-lakíx-ṭu kon-wé·ṭa. [*Continually their-dancing-for they-come.*] 'ekal 'iṭí·-kon wét·e. [*Then her-they keep shut up.*] kén·e-komé·nawa 'iṭi kon-wét·e. [*One-month her they-keep shut up.*] 'ekal 'iṭi kon-wanú·ke-weno, 'ekal 'iṭi kon-poyén·uka húya-ṫs 'ekal 'iṭi kon-layá·kiknuka, 'ekal 'iṭi-kólonlayá·ki-t. [*Then her they-take out-it is said, then her they-cause to put about the neck string of beads*-obj. *then her they-cause to put on wrist, then her-ankle-on.*]

'ekal tsí·lat-kó·la-koṫs wé·ṭa-weno. [*Then Woodpecker-Girl*-dual(subj.) *set out-it is said.*] " 'ów 'óy·a-koṫs! ["*Oh, friend*-dual!]'eké·-hinte-t mos-wé·ṭa?" [*Place-what-to you* (dual)-*go?*"] " 'uyé·, ká·li-ma hiná·ṭi, ká·li-ma wún·i." ["*Come on, clover-we*(pl.) *go to pick, clover-we*(pl.) *go for.*"] " 'ów, ka-tsókte-welak," káca. ["*Oh, I-go along-will,*" *say.*] 'ekál-weno: " 'ów," káca. [*Then-it is said "Very well," say.*] mate mí· 'is-ká·li-n-'enay. [*Later on thee we* (dual)-*get clover for-future.*] 'in-tíka-ṫs cáwi-n," káca. [*Thy-packbasket*-obj. *bring-thou,*" *say.*]

" 'unú·! kaní·ca ka-wé·ṭa-ma." ["*Mother! I too I-go-pr.*"] "cuwá-n wé·ṭa. ["*Do not-thou go.*] mákca-miṭi 'icí·ca hél·a-ma 'óp·oy." [*Thus-and so soon not-we*(pl.) *go about.*"] " 'í·ca ka-wé·ṭa-n-enay," nó·tsa-weno. ["*Nevertheless I-go-future,*" *cry-it is said.*] " 'ów, mate 'iṭis ká·line-nṫsoṫs!" ["*Very well, later on her get clover for-you*(dual)!"] " 'ów," káca. ["*Very well,*" *say.*]

'ekal kon-wé·ṭa. [*Then they*(pl.)-*go.*] 'ekal dót kon-'ó·ni lóklo-t. [*Then over there they*(pl.)-*arrive meadow-at.*] lóklo-t kon-'ó·ni, 'ekal ká·li. [*Meadow-at they*(pl.)-*arrive, then get clover.*] ká·li-weno, 'iṭi kos-ká·line, 'iṭi kos-hiná·ne. [*Get clover-it is said, her they*(dual)-*get clover for, her they* (dual)-*pick for.*] 'ekál-weno kon-pál·anuka huna-kon-tíka-ṫs. [*Then-it is said they* (pl.)-*cause to be filled own-their-baskets*-obj.] 'ekal: "wéy-ma 'ánwaṭi, 'óy·a!" káca. [*Then: "Let-we*(pl.) *go back, Friend!" say.*] " 'ów," káca. ["*Very well,*" *say.*]

'ekál-weno kon-wé·ṭa, kon-'ánwaṭi. [*Then-it is said they*(pl.)-*go, they*(pl.)-*go back.*] 'ekal 'iṭi kos-hetéy-weno kén·e-mó'u-n dó·ca. [*Then her they*(dual)-*leave behind-it is said one-hillock-of far side.*] 'ekal múk-lemén-to' weno láka-n yó·k-tsáte. [*Then trail-end-at it is said goose*-subj. *dead-lie.*] 'ekál-weno má· 'úṭe, hélwa-má·yen má· 'úṭe. [*Then-it is said that*(obj.) *see, Pelican-Queen that*(obj.) *see.*] 'ekál-weno: " 'ów, né·-ts ká·ka-koṫs-iṫs 'ikhiná·ne, má·-cu koṫs-cál·e." [*Then-it is said: "Oh, this*-obj. *uncle*-dual-obj. *I-pick for, that-with they-make things of feathers.*"] 'ekal má· hiná·-weno, 'adé·-'aye pá·ka-ṫs má· 'áyaw. [*Then that pick up-it is said, big-indeed feathers*-obj. *that gather.*] 'ekal no-ṫs tsaníx-miṭi huná·-tika tóla. [*Then this*-obj. *tie up-and own-basket threw into.*] 'ekal 'i·-wé·ṭa-weno, 'i·-wé·ṭa. [*Then she-go-it is said, she go.*] má·-hinte-m kén·e-yó'kaṭi-ṫs táke, 'ekal 'í·wak-weno, 'í·wak, 'ekal hínte-m: hochochochoc 'iṭi-'á·wi-hinte-n tú·le-m. [*Thence one-hill*-obj. *go up, then heavy-it is said, heavy*(*it is*), *then somewhere-from: (voice of the Coko) her-pack-what-of inside-from.*] 'ekál-weno weyá-t-'i· kókcetuka-weno, 'i·-'úte. [*Then-it is said ground-upon-she drop-it is said, she-fell.*] 'ekál-weno: "lutut!" kacá·-weno, "hochochochoc, lutut!" [*Then-it is said: "Lutut!" say-it is said, "Hochochochoc, Lutut!"*] talá·-tukce 'é·ya-'ak hél·a talá·tukce-n-tém·a. [*Rise wish-ing not rise-can.*]

'ekál-weno: "tsáṫs·o, ṫsáṫs·o! má·-húya-n pó·ye-hinte ka-'é·ya," káca. [*Then-it is said: "Grandchild, Grandchild! that-beads-thy wear around the neck-what*(obj.) *I-want,*" *say.*] 'ekál-weno 'oṭóṭ·a-ce 'iṭi túlyaṭi.

[*Then-it is said four-time her circle around.*] 'ekál-weno huna-pó·ye-hinte wanú·ke, 'ekal 'iṭi wáya, 'iṭi-t má· tolá·-weno. [*Then-it is said own-necklace*(obj.) *take off, then him give, him-to it throw-it is said.*] 'ekál-weno wé·ṭa, caka wé·ta-miṭi-ce 'ó·ni. [*Then-it is said go, in appearance go-and-again come.*] "'ów ṫsáṫs·o! ṫsáṫs·o! ṫsáṫs·o!" kaca. ["*Oh Grandchild! Grandchild! Grandchild!*" *say.*] "'in-layá·ki-t cúku, ka-'é·ya, miṭi-ka 'ó·ni, ṫsáṫs·o!" ["*Thy-wrist-on be, I want, and so-I come, Grandchild!*"] 'ekal huna-layá·ki-ṫs 'iṭi-t wí·paṭi, 'iṭi wáya. [*Then own-bracelets*-obj. *him-at throw, him give.*] 'ekál-weno wé·ṭa, 'oṭót·a-ce túlyaṭi, 'ekal má·-húya cáwi, miṭi wé·ṭa. [*Then-it is said go, four-times circle round, then that-beads take, and go.*]

'ekál-weno céwi 'ánwaṭi. [*Then-it is said again return.*] "'ów ṫsáṫs·o! 'in-kólon-layá·ki-t cúku ka-'é·ya," káca, "miṭi-ka 'ó·ni." ["*Oh Grandchild! Thy-ankle-on be, I-want,*" *say, "and so-I come."*] 'ekál-weno kólonlayá·ki-t cúku wít·apo, 'iṭi wáya. [*Then-it is said ankle-on be strip off, him give.*] 'ekal má·-ṭáy wé·ṭa, cewi wé·ṭa. [*Then that-man go, again go.*] cahit 'ánwaṭi-weno [*Long after return-it is said.*] "ṫsáṫs·o! 'ekal 'in-kó·le-hinte ka-'é·ya, má· ka-'é·ya, miṭi ka-'ó·ni, ma·-kó·le-ṫs." ["*Grandchild! Next they-wear-what I-want, that I-want, and so I-come, that-garment*-obj."] 'ekál-weno má· wít·apo miṭi hów·oyṭu hów·o. [*Then-it is said that strip off and naked sit.*] 'ekal má· wélik, miṭi wé·ṭa-weno. [*Then that take, and go-it is said.*]

'ekal 'ánwaṭi-weno céwi. [*Then return-it is said again.*] 'ekal 'iṭi welík-weno, huna-táwlik hél·a-t hó·ye-weno, 'iṭi 'ú·ne-weno. [*Then her take-it is said, his-arm's under-at put-it is said, her carry off-it is said.*] 'ekal 'iṭi wé·nuka-weno kanín-wali-t, kanín-wali-t, kanín-wali-t kanín-wali-t, kúṭa-n dó·ca-m 'onín·uka. [*Then her take-it is said North-World-to, North-World-to, North-World-to North-World-to, gate's far side-to bring.*] 'ekál-weno lám·a-n túle-t 'ú·ne, tíl·en hél·a-t 'iṭi 'ú·ne. [*Then-it is said ceremonial house-of inside-to carry, drum*(*of*) *under-at her put.*]

The Stealing of Hawk's Wife

They lived, so the story goes, at Tuley-omi; Coyote Old Man, and Frog Old Woman his wife, the Hawk Chief his grandson, the Grapevine Hawk, his little grandson, and those rascals Bluejay and Robin and Hummingbird, and the two Woodpecker Girls. There they stayed.

They gave a dance, the story says, and they danced and danced for four days, a puberty dance for Helwa-Mayen,[6] Hawk's wife. All the time the people kept coming for the dance. Helwa-Mayen was kept shut up; one month they kept her shut up. Then they took her out and they put strings of beads around her neck, and on her wrists, and on her ankles.

Then one day the two Woodpecker Girls came by. "Oh, Friends! Where are you going?" "Come along! We're going for clover, going to pick clover." "Oh yes!" said Helwa Mayen, "I'll go along." "All right," said the Woodpecker Girls. "We'll pick the clover for you. Bring your pack basket."

"Mother! I'm going along with them." "No, you mustn't go. Girls never go about like that so soon after their dance." "I'm going anyhow!" said Helwa-Mayen, and she cried, they say. "Oh all right," said her mother, "But you two must pick the clover for her." "Yes, of course," said the Woodpecker Girls.

So they all set out, and a long way off they came to a meadow. They came to a meadow and there they found clover. They picked the clover. The two girls got clover

[6] There is some doubt about the proper translation of the name of Hawk Chief's wife. má·yen is the term for the wife of a chief, and is translated as *queen* by the Indians. One old informont said that hélwa was the name of a big bird, possibly a pelican. A younger informant said that she did not know of any such bird, and that in ordinary speech hélwa means *beautiful*. Her translation of the name was *Exquisite Queen*.

for Helwa-Mayen, they picked it for her. After a while their baskets were all filled up. "Let's go back, Friend!" said the Woodpecker Girls. "All right," said Helwa-Mayen.

And so they went, they started home. The two girls walked on ahead, they say, around the other side of a little hill. At the bend in the trail, there was a dead goose lying. And she saw it, Helwa-Mayen saw it. And she said: "Oh, I must get those feathers for my two uncles! They will be able to use those!" And she picked them up, great big feathers, and bunched them together and tied them in a bundle, and she threw it into her pack basket. And then she went on, they say. She went on, and presently she started up a little hill. The pack began to grow heavy, they say, heavy. Then there came a voice from somewhere: "Hosh hosh hosh hosh!" from somewhere inside her pack. Helwa-Mayen sank down on the ground, they say, she fell. "Lutut!" said the voice. "Hosh hosh hosh hosh! Lutut!" She tried to get up but she could not.

"Grandchild! Grandchild! I want those beads you have around your neck!" It was the Shoko.[7] He had come out of the pack, and he was circling round her, four times he circled around her. She took off her necklace and gave it to him, she threw it to him, they say. Then he seemed to be going, but he only went and came back again. "Oh Grandchild! Grandchild!" he said, "I want the bracelets that are around your wrists, that's why I came back!" Then she threw her bracelets to him, gave him those. And he went, and circled round her four times, and took the beads and went away.

Then he came back again. "Oh Grandchild! I want the ones on your ankle, that's why I came back!" So she pulled off the strings of beads that were around her ankles and gave him those. And the man went away, he went away again. It was a long time before he came back. "Grandchild! Now I want the skirt you're wearing! That's what I want, that's what I came back for, that skirt!" So she stripped it off and sat there naked. He took it, and he went away.

Then he came back again, they say. And he took her and put her under his arm and carried her off. He took her away to the North World, to the North World, and there he brought her in through the gate to the other side. He carried her into the ceremonial house, and he put her under the drum.[8]

[7] The cóko is described as a being somewhat like the kuksu, but having shorter feathers. The individual who impersonates the cóko in ceremonies wears a feather head-dress considerably smaller than that of the kuksu dancer.

[8] The story continues with an account of the search for Hawk's wife carried on by Coyote Old Man and his Rascals. The whole was never obtained in Miwok.

STRUCTURAL RESTATEMENTS: 1

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The series of papers of which this is the first will attempt to restate in summary fashion the grammatical structures of a number of American Indian languages. The languages to be treated are those presented in Harry Hoijer and others, Linguistic Structures of Native America (New York, 1946).[1] These restatements are not based on new field work, but on the contributions in this volume and on the chief published treatments of the languages in question, as well as on limited manuscript material. While the other publications and manuscript material have been consulted for additional details and for purposes of checking results, the chief basis for each restatement is the corresponding contribution in LSNA (to which the reader is referred throughout), since a major purpose in the present series is comparability with these contributions.

The justification for this series is therefore not the presentation of new data, but the testing and exploring of statements of morphological structure. The statements in this series will differ from those in LSNA partly in the use of somewhat different techniques and compact formulations, but chiefly in being restricted to the distributional relations among the elements of the language. The present restriction to distributional relations carries no implication of the irrelevance or inutility of other relations of the linguistic elements, in particular their meanings. Information concerning the meanings is not derivable from the distributional statements, and is clearly necessary for any utilization of the language. However, because of the differences between the distributional relations and such other relations as those of meaning and phonemic similarity, and because of the independence of each type of relation in respect to the other types, it becomes desirable to examine each type of relation separately.

[1] Hereinafter abbreviated LSNA. This series originated as a review of the book. The importance of the volume, and the opportunity which it offered for exploration into the comparability of structural formulations, led to a change of plan whereby this series is written as an independent restatement of the LSNA structures, while a separate review, by W. D. Preston, appears elsewhere in this issue.

SWADESH' ESKIMO[2]

1. Morpheme alternants and morphophonemes.[3]

[2] Morris Swadesh, South Greenlandic (Eskimo), LSNA 30–54. Sources used in addition to Swadesh are: S. Kleinschmidt, Grammatik der grönländischen Sprache (Berlin 1851), on which Swadesh' own study was based; William Thalbitzer, Eskimo, in Franz Boas, ed., Handbook of American Indian Languages, Part 1, 967–1069 (BAE-B 40, Washington 1911); Francis Barnum, Grammatical Fundamentals of the Innuit Language (Boston 1901); Franz Boas, Eskimo Lexicon (1883), listed as Ms 342 in C. F. Voegelin and Z. S. Harris, Index to the Franz Boas Collection, Language Monograph 22 (1945), and now in the Boas Collection of the Library of the American Philosophical Society. Because of the differences in geographic dialect and in phonetic transcription among these sources, Eskimo forms cited will in most cases be taken from Swadesh-Kleinschmidt. When other forms are cited, they will be given in Swadesh' phonemicization.

[3] The phonemes are taken as in Swadesh 30-2. A few minor modifications seem possible, though they may lead to a less convenient set of phonemes. It may be possible to consider ŋ (the nasal homoorganic with q) as a positional variant of q and a free variant of γ in particular forms, instead of taking it as a phoneme. The rare phoneme y, which occurs only between u and a (in which position it is phonemically distinct from i), may perhaps be phonemicized as a repetition of the preceding vowel plus i: puyak *ozidized blubber* (contrasting with puiaq *bird's crop*) could be written puuiak if the sequence uu/aa + i/y + u/a (where / indicates *or*) does not occur otherwise; to date, I have noticed no case of this sequence. None of these phonemic changes would, however, simplify the morphophonemic statements.

A great deal of the complexity of Eskimo grammar derives from the fact that many morphemes have variant phonemic forms in various environments.[4] Some of these phonemic differences among the alternants of particular morphemes can be expressed by regular phonological statements. E.g. when a (suffix) morpheme beginning with two consonants follows in close juncture after a morpheme ending in a consonant, the suffix has an alternant lacking the first of the two consonants (Swadesh 33–4); this fits in with the fact of phonemic distribution that consonants occur in clusters of one or two and no more.[5]

In the case of other morphemes, the alternation among their positional variant can be expressed compactly with the aid of morphophonemic symbols. E.g. certain morphemes containing the phoneme i in many environments have alternants with a instead of i when a vowel follows. Swadesh (33) writes the i in these morphemes as ĭ, while the i in other morphemes (which do not have this and other alternations characteristic of i) is not specially marked.[6] Of the many suffixes, certain ones have correspondingly different alternants in correspondingly different environments; Swadesh (32) marks each such group of suffixes with a particular morphophonemic juncture, and offers compact statements of the phonemic alternations which occur in the environment of each such juncture.

The alternations of one group of stems in various environments do not correspond to the alternations of other groups of stems in those environments (e.g. tikĭq *forefinger* has the variant tikiγ before -it *plural*, while alĭq *harpoon line* has the variant aγl before -it). Kleinschmidt, Barnum, and Thalbitzer discuss this under the heading of various "classes" of stems, and deal with it in those sections of the grammar in which they indicate the suffixes with which these stems occur. Since these stems, however, do not differ in the suffixes with which they occur but only in the phonemic alternations of their variants, the information concerning their differences (i.e. concerning their variants) can be given (as is done by Swadesh) at the point where phonemic variations within morphemes is treated.[7]

Various groups of suffixes also have special variants in particular environments. For example, after the N_d group of morphemes (demonstrative sub-group of nouns) the various *C* morphemes (case-endings) have variants different from those which they have after other *N* morphemes: inuɲnut *to people*, isuanut *to its end*, but qaβuɲa *to the south*, aβuɲa *to the north;* qaqqamit *from the mountain*, uβlaamit *from morning*, but qaβaɲɲa *from the south*, aβaɲɲa *from the north*.[8]

Among the alternations of morphemes in different environments we may also consider the varying and repeated forms of the number and case morphemes, and the various

[4] I.e. there are many cases of morphemes, often but little different from each other phonemically, which are complementary to each other in distribution and can hence be regarded as positional variants of one morpheme.

[5] E.g. -γṣuaq *evil, large*, after nuna *land* (nunaγṣuaq) has the variant ṣuaq after uyaγak *stone* (uyaγaγṣuaq). Summary formulations of such morphophonemic relations are given by Swadesh. While similar data is given in greater detail by Thalbitzer and the others, it is not only diffuse but is also intermingled with sub-phonemic sound alternations which Swadesh treats as positional variants of phonemes.

[6] Compare aki in aki-γa *my coat*, aki-a *his coat*, with morphophonemic nipĭ in nipi-γa *my voice*, nipa-a *his voice*.

[7] In giving the variants of each morpheme or group of morphemes, we state the environments in which each variant occurs. Thus, many morphemes have certain variants before the plural suffix and before the various case suffixes (except the absolutive). Rather than say that these case suffixes are added to the plural stem, which is undesirable since the forms are plural neither in meaning nor in grammatical concord, we give both plural suffix and case suffixes as the environment in which the prior morphemes have the variants in question.

[8] Thalbitzer 1050 (where it is treated as a different inflection).

forms of the person morphemes, after these morphemes are separated out in section 3 below.

2. Morpheme classes.

P: particles, not occurring with any of the non-initial morphemes listed below (except in one specially noted case), and in most cases having each by itself the phonemic characteristics of a word. These may be sub-divided as follows:

P_a: frequently occurring alone as a whole utterance: aak *yes.*

P_b: occurring usually as utterance introducers: imaqa *imagine! . . . .*

P_c: occurring usually before words containing M_s (verbs with subordinate mood suffixes) and before words containing C_r (relative case): nauk *although.* For greater detail, this group could be further subdivided, since various members of P_c occur before particular members of M_s.

P_d: occurring chiefly before words containing M_v: imannat *so many,* qapa *when?*

P_e: a sub-group of P_d which also occurs with a suffix following it, the suffix being -nit *from, as against,* a member of C_o (plus plural): itsaq *years ago* (member of P_d), itsaγ-nit *as compared with years ago.*

tak-: an emphatic morpheme prefixed occasionally to S_{nd} morphemes.

S: stems, occurring initially in the word, with non-initial (suffix) morphemes following within the word. In some cases these suffixes are zero and we may say that the stem constitutes the whole word. Various sub-groups of S may be distinguished according to the particular suffixes which sometimes occur directly after them.

S_{vi}: intransitive verb stems, which sometimes occur directly before Q_a suffixes, but never immediately before Q_b suffixes: au *to rot.*

S_{vt}: transitive verb stems, which sometimes occur immediately before Q_b suffixes, but never immediately before Q_a: tuqut *to kill.* S_v will be used to indicate both S_{vi} and S_{vt}.

S_x: stems which occur both in S_{vi} or S_{vt} positions and in S_n positions.

S_n: nominal stems, which sometimes occur immediately before Q_c or C suffixes: iγlu *house.*

S_{nd}: demonstratives, occurring directly before C suffixes (which in this position have special variants), but not before Q_c; and occurring occasionally after tak-: ma- *here.*

S_{ni}: interrogatives and some other pronouns, occurring before C and -t *plural,* but not before Q_c: kik- *who?*

S_{nr}: stems which always occur with Q_c; there are various sub-groups, one of which always occurs with C_r: kisi *alone.*

S_{np}: personal pronoun stems which occur only with particular ones of Q_c: uβa- occurs only with -na I; iliβ- only with -t (iβlit *thou*).

S_{nn}: numerals, entering into special sequences with each other. Except for atausiq *one,* these never occur without either the dual or the plural suffix following them, and have two plural suffixes: sisamat *four,* sisamait *four groups.*

T: non-initial morphemes, which always follow a member of S or another T; one group follows C. Those T which occur after S_{vi} will be marked with a $_{vi}$ subscript. Those T which occur after no S other than S_n will be marked with subscript $_n$; and so on. Each T morpheme is thus marked with a subscript indicating after what group of S it occurs. Each T will also be provided with a second subscript, to indicate whether it is ever followed immediately by Q_a (in which case it would be similar to S_{vi}), or by Q_b (thus being similar to S_{vt}), or by Q_c or C (which would be similar to S_n). T_{vn} will then indicate a T morpheme which sometimes occurs directly after S_v, and sometimes occurs directly before Q_c or C morphemes;[9] occa-

[9] In effect, each T morpheme changes the syntactic status (i.e. the selection of final verb or noun suffixes) of whatever precedes it to that indicated by its second subscript. T_{vn} occurs

sionally, of course, this T_{vn} will occur before or after other T morphemes, in which position its specific T_{vn} status could not be determined without additional data about the other environments in which it occurs. The subscript $_x$ will be used to indicate $_{vi}$, $_{vt}$, and $_n$ equally: T_{xn} thus marks a morpheme which occurs occasionally after S_{vi}, S_{vt}, or S_n (as well as after T), and which is sometimes followed by Q_c or C, but never by Q_a or by Q_b. Furthermore, the first subscript of each T also indicates which sub-groups of T it occurs directly after: T_{vn} does not follow T morphemes whose second subscript is $_v$, but only those whose second subscript is $_n$ (or $_x$, if the last subscript before $_x$ is $_n$). The following sub-groups of T may be noted: T_{nn} (never directly after S_c, nor directly before Q_a or Q_b), T_{xn}, T_{vn}, T_{vv} (never directly after S_n nor directly before Q_c or C), T_{xv} (after anything, but never directly before Q_c or C), T_{vn}, T_{xx} (followed by whatever would follow the predecessor of T_{xx}; e.g. S_n T_{xx} could be followed by T_{nv} or Q_c, while S_v T_{xx} could be followed by T_{vv} or Q_a), T_{vtvi} (never after S_{vi} or S_n, nor before Q_b or Q_c), T_{xvi}, T_{xvt}, T_{cv} (only after C and before M_v).

M: The modal morphemes in this group are merely a special case of the T_v morphemes. They are listed separately only because they are the last of any sequence of T, and because every Q_a or Q_b has a member of M_v preceding it, though it may have no other T in the word.

M_{vi}: the last T_{vvi}, always present before Q_a: -βu- *intransitive*.

M_{vt}: the last T_{vvt}, always present before Q_b: -βa- *transitive*.

M_{vn}: those M_v (whether M_{vi} or M_{vt}), after which the members of Q_b containing recurrent ("fourth") person sometimes occur: -γa- *because, when*. . . .

M_n: a small group of "participial" T_{vn} which occur only directly before C or Q_c (but directly after S_v or any T whose second subscript is $_v$): -ni- *abstract nominalizer*.

C: case-endings, occurring directly after S_n and after every M_n, and after every sequence of T morphemes (excluding T_{cv}) if the last subscript in the sequence is n.[10] In particular:

C_a: absolutive, which has grammatical concord as to plural with Q_a in the following word (within the utterance). This morpheme has many alternants, among them -q (unnuaq *night*), -k (inuk *man*), zero (iγlu *house*).

C_r: relative, which has grammatical concord as to plural with Q_c in the following word (within the utterance). This morpheme is -p (iγlup *of the house*).

C_o: the other (adverbial or local) members of C: -mi *in*, -mit *from*, -mut *to*, -kut *through*, -mik *by means of*, -tut *like*.

D: dual (-k) and plural (-t) morphemes, which occur, within the word, in the position of C_r and C_a: iγluk *two houses*, iγlut *houses*.

Q_a: personal ("subject") pronouns which occur after M_{vi}: -q *he did, he does* (lists in Kleinschmidt 19–20 Table 2 under "ohne suff.", Thalbitzer 1033, Barnum 117–20).

Q_b: personal ("subject-object") pronouns which occur after M_{vt}: -aa *he . . . him* (lists in Kleinschmidt 19–20 Table 2, Thalbitzer 1034, Barnum 123).

Q_c: personal ("possessive") pronouns which occur directly after S_n, or after every sequence of T or M the last subscript in which is $_n$: -γa *my* (lists in Kleinschmidt 19–20 Table 1, Thalbitzer 1021–2, Barnum 19).

E: enclitics, occurring, within the word, after all the morpheme classes listed above: -lu *and*.

3. Morphemic components.

The further analysis of the structure can be facilitated by a breakdown of Q_a, Q_b, and Q_c into morphemic components. Whereas

only after a morpheme having verbal status, and changes it into a noun.

[10] E.g. after T_{vn}, T_{vn} T_{xx}, etc.

each member of these classes, say -tik *of you two* (Q_c), has been considered as a single whole morpheme, it is possible to consider it now as a combination of morphemic components. In the case of -tik, these components would be C_a, dual, and second person. In order to admit this breakdown in the present analysis, it will have to be based not on meaning but on distribution.[11] This distributional differentiation, however, will be not in respect to the rest of the word (since all members of Q_c are identical in distribution in respect to the rest of the word in which they occur), but in respect to other members of Q_a, Q_b, Q_c, and D in other words.

Since the positions of C_a and C_r have been defined, we notice that some members of Q_c are substitutable for C_a (the whole utterance remaining otherwise unchanged), and as many other members are substitutable for C_r. On this basis we say that half the members of Q_c contain C_a (e.g. -ɣa *my* in iɣlu-ɣa *my house*), while the other half contain C_r (e.g. -ma *my, of my* in iɣlu-ma *of my house*).

Two or more words containing C (some of which may begin with S_n, others with S_{nd}) may occur in sequence; the last of these may contain Q_c and the others not: uqautsit makkua tusaɣkaβit *words, these, thy-heard-ones*. In such cases it is noticed that if the first words contain the plural suffix, only certain members of Q_c occur in the last word; if the first words contain the dual suffix, only certain other members of Q_c occur in the last word; and if the first words contain no D suffix, again only particular members of Q_c occur in the last word. On this basis, we divide Q_c into three parallel groups, the members of the first group containing the plural of the preceding S, the members of the second containing the dual, and the members of the third containing neither. The grammatical agreement among the words in the sequence is then expressed by saying that the plural morpheme does not occur in each word independently, but occurs over all the words in the sequence at once. I.e. in this environment the plural and the dual are discontinuous morphemes, suffixed to the sequence as a whole; if the plural occurs here, its phonemic form consists of sections which are appended to each word in the sequence. Similarly, the member of C appended to each word in the sequence is the same (in the example above, the first two words have C_r and the Q_c of the last word contains C_r). The C morphemes are therefore discontinuous in this environment in the same way as the D morphemes.

In other cases, we have a sequence of two words, the first containing C_r and the second any C (not necessarily C_r), which may be included in Q_c: umiap suyua *of the boat, its front*. Here we notice that if the first word lacks the plural suffix, only certain members of Q_c occur in the second word; and if the first has the plural, certain other Q_c occur in the second. This division of Q_c is not the same as in the paragraph above. Hence we can redivide Q_c along a new criterion: those which contain the plural of the preceding C_r and those which contain the singular of the preceding C_r. In accordance with the last paragraph, both -i *his . . . s* and -it *their . . . s* (both are Q_c containing C_a) contain the plural of their preceding S and agree with the plural of the other C_a words in the sequence, while -a *his one* and -at *their one* (also Q_c containing C_a) do not contain the plural of their S and agree with the lack of plural in the other C_a words of that sequence.[12] In terms of the present paragraph, both -it *their . . . s* and -at *their one* contain the plural of their own person agreeing with the plural of the C_r word which comes before in the sequence, while -i *his . . . s* and -a *his one* do not contain the plural, again in agreement with the C_r word.

In a similar way, we find differences of distribution and an agreement between members of Q_c which occur in sequences with morphemes meaning *I*, those occurring with morphemes meaning *thou*, those occurring with S_n words or morphemes meaning *he*

[11] Meaning alone is in any case not adequate, since, for example, it would be hard to assign a distinctive meaning to the Ca element.

[12] Note iɣlua *his (one) house*, iɣluat *their (one) house*, iɣlui *his houses*, iɣluit *their houses*.

(*she*), and those occurring in a special subset of the positions of the last members mentioned.[13] The Q_c thus contain elements agreeing with person.

When a word contains Q_c but no C_o, we can now analyze each Q_c as containing the following components: either C_a or C_r; either singular or dual or plural of the S-part of the word to which the Q_c is suffixed; first, second, or third (or, in some positions, fourth) person (as possessor of the S-part); and singular, dual, or plural of the person. In words which contain C_o after the Q_c (e.g. nuna-βti-nit *from our land*) only half the Q_c members occur. I.e. the Q_c are not differentiated as to C_a and C_r in this case, and we may say that they do not contain C_a or C_r: the C_o which follows the Q_c replaces the C_a or C_r which is contained in the Q_c when there is no C_o following.[14]

The members of Q_a can also be considered as combinations of morphemic components. In a sequence consisting of word with C_a and word with Q_a, only half of Q_a occur if the C_a lacks plural suffix, while the other half occur if the C_a has the plural: inu-k pisuγ-pu-q *the man went*, inu-it pisuγ-pu-t *the men, they went*. Similarly, particular Q_a occur according to the person of the C_a word.[15] We therefore analyze each Q_a into a person component and a number component.

We now note the limitations of Q_b in respect to sequences consisting of word with C_r plus word with C_a plus word with Q_b. If D follows the C_r we find only particular Q_a morphemes occurring, the rest occurring if D does not follow C_r. There is a similar sub-grouping of the Q_b morphemes in agreement with the presence or absence of D morphemes after C_a. This sub-grouping, however, criss-crosses with sub-grouping in agreement with D after C_r. Finally, it is also possible to obtain separate sub-groupings of Q_b in agreement with the person of the C_r-containing word and in agreement with the person of the C_a containing word. On the basis of all this we consider each Q_b as a combination of four components: person ("subject"); its number; another person ("object"); the number of this other person.

The various agreements as to D noted in the last few paragraphs can be expressed by saying that in the sequence environments[16] $-C_r \ldots -CR \ldots$, $-C_a \ldots -M_{vi}R \ldots$, $-C_r \ldots -M_{vt}R \ldots R$, and $-C_a \ldots -M_{vt}RR \ldots$ the D morphemes are discontinuous, being composed of sections one of which occurs in each position within the sequence (if the D morpheme occurs in that sequence).

The many Q_a, Q_b, and Q_c morphemes have now been reduced distributionally to various combinations of four R components and the previously recognized D, C_a, and C_r.[17] There

[13] This last group contains the recurrent or fourth person which occurs in the positions indicated at the end of section 3.

[14] Since we describe Q_c (or Q_c plus C_o) as containing both C and D as well as person, it is convenient to say that even when the person (Q_c) is lacking we have both C and D present. By the side of iγlu *house* (with Ca) and iγlup *of the house* (with C_r) we have iγlut *house* (with D). We can analyze iγlup as containing not only D but C_a D or C_r D, these last two being identical phonemically. With the other members of C this phonemic identity does not occur: iγlumut *to the house*, iγlunut *to the houses*. If we analyze iγlut in this way, C_a and C_r become similar to C_o in respect to D, and the forms which sometimes have Q_c suffixes always have C (instead of having the C_r and C_a absent if D follows without Q_c, as it does in iγlut). There is nothing morphophonologically irregular in considering that iγlut contains a zero C_a or C_r, since C_a is in any case zero after iγlu, and the -p of iγlup would drop before a following -t (two consonants do not occur at the end of a word).

[15] Plus the added conditions for the recurrent person.

[16] R indicates the personal reference parts of Q_a, Q_c, Q_b (the last containing two independent R). The . . . indicate the position within the environment of the portions of D, after the respective R or other morpheme.

[17] If we could state with phonemic or morphophonemic regularity what portions of each Q were D, C, and R, we would break each Q up into these successive morphemes. This is indeed possible for various members of Q in various Eskimo dialects. However, since a statement of the phonemic variants of each component, in the environment of each Q, would be very complicated and irregular, it seems best to list the Q as morphemes, by and large, and to carry out a com-

is gain rather than loss in considering the person references of Q_a and Q_c, and the double references of Q_b, as being all the same elements R rather than different possessive, subject, object, etc., pronouns. It is characteristic of Eskimo that not only are these pronouns different in meaning from English subject, object, etc., but they also do not differ in meaning from each other except in ways related to the difference in their positions. The R of Q_a, and to a lesser extent of Q_b, are often phonemically identical or similar to the corresponding R of Q_c. The third person singular member of Q_a has in many environments the variant -q, identical with the C_a suffix. From the point of view of English, tikipputit (S_v M_{vi} R) can be translated *thy arrival* (as though it were S_n C_a R) or *thou arrivest;* tikippuq (also S_v M_{vi} R) can be translated *arrival* (as though it were S_n C_a) or *he arrives.*

Various special distributional limitations can be conveniently stated in terms of these components. For example, the two R in a Q_b morpheme are never the same. We do not have a given person as both "subject" and "object" in a Q_b; English *he stabs himself* would be translated in the same way as *he is stabbed* or (*someone*) *stabs him*, i.e. kapiβuq (S_v M_{vi} R). The first three persons of R have much the same distribution. The fourth or recurrent, meaning *he himself* or *his own*, occurs almost only[18] in $-C \ldots (-C)$ $-M_vR_3$ and $-M_{vs}(R_a) \ldots -M_vR_3(R_a)$.

In a similar but much simpler analysis, the negative-modal morphemes (Thalbitzer 1036–45) can be broken down into combinations of a negative component (member of T_{vv} and occurring last before M) plus the previously recognized M morphemes.

4. Equivalence of morpheme sequences.

A compact description of the structure of utterances in terms of the morpheme classes can be obtained if we equate every morpheme class or sequence of morpheme classes to any other sequence which substitutes for it within the utterance.

We begin with the classes S_v and S_n and their equivalents.

$S_n = N^1$. This and the next equation are merely a change of symbols so as not to confuse the syntactic status of N and V sequences with the specific morpheme classes S_n and S_v. S_n includes all the subgroups of S_n, within the distributional limitations noted in section 2 above.

$S_v = V^1$.

$S_n\ T_{nn} = N^1$. The sequence of S_n and T_{nn} can be substituted for S_n (i.e. the sequence occurs in the same utterance positions and word positions as does S_n). Since the S_n of this equation can itself be the resultant of $S_n\ T_{nn} = N^1$ (since $S_n = N^1$), this equation permits a whole series of T_{nn} after an initial S_n.

$S_x\ T_{xn} = N^1$.

$S_v\ T_{vn} = N^1$.

$S_v\ T_{vv} = V^1$. E.g. tuqut *kill* (S_{vi}), tuqutsi *kill-things* ($S_{vi}\ T_{vivi} = V_i^1$).

$S_x\ T_{xv} = V^1$.

$S_n\ T_{nv} = V^1$. E.g. iγlu-qaq *have a house*, substitutable for tikip *arrive.*

$N\ T_{xx} = N$. E.g. iγlu-inaq *only a house.*

$V\ T_{xx} = V$.

tak- $S_{nd}^1 = S_{nd}^2$. S_{nd}^2 is included in S_n above.

When N or V are not substitutable for all the preceding N or V, they are given a higher raised numeral than the ones for which they do not substitute.

$VM_n = N^2$. To this N^2 we can no longer add, say, T_{nn}, since T_{nn} is added only to N^1.

$N^2\ C\ T_{cv} = V^2$. A raised numeral on the left hand side of the equation represents itself and all lower numerals.

$V^2\ M_v = V^3$.

$V^2\ M_{vs} = V_s^3$.

$N^2\ R = N^3$.

$N^3\ (S_{nd})\ N^3 = N^3$. When C is added here

ponental breakdown only for grammatical analysis.

[18] Parentheses indicate that the enclosed element sometimes occurs in this environment, but not always. R_3 indicates the third person member of R. The $_s$ subscript of R is only to indicate that the two R so treated are identical.

it is added as one discontinuous suffix to each word in this sequence.

$N^3\ C_r\ N^3 = N^3$.

$N^3\ C_o\ N^3 = N^3$. This is reported to be rare.

$V_t^3\ (N_r^3)\ N_a^3\ N = N$. See below.

$P_c\ V_s = V_s$.

$N^3\ C_o = P_d$.

$P_s\ C_o = P_d$.

$P_d\ V^3 = V^3$.

$N^3\ C_o\ V^3 = V^3$.

In what follows it is noteworthy that although V sometimes occurs with one R (Q_a) and sometimes with two R (Q_b), and although the N_a preceding it sometimes agrees with and refers to the "subject" R of the V (when it is Q_a) and sometimes the "object" R of the V (the second R or Q_b), we can nevertheless make a simple distributional statement in the matter: V always has an R agreeing as to plural and person with a preceding N_a, and only sometimes does it also have an R agreeing with a preceding N_r.

$N^3\ C_a\ V^3\ R = V^3\ R = N_a^4\ V^3$. The presence of only one R indicates that the $V^3 = V^2\ M_{vi}$.

$N^3\ C_r\ V^3\ R\ N_a^4 = N_r^4\ N_a^4\ V^3$. The presence of two R (one listed after the V^3 and the other included in the N_a^4) indicates that the $V^3 = V^2\ M_{vt}$.

$N^4\ D = N^4$. If the N^4 has discontinuous parts, so has the D.

$(N_r^5)\ N_a^5\ V_s^3\ (N_r^5)\ N_a^5\ V^3 = (N_r^5)\ N_a^5\ V^3$.

P_b utterance = utterance.

Bearing in mind the fact that for each symbol henceforth used we can carry out the substitutions permitted by the equations above, we can now say that every utterance consists either of P_a or else of

$$N_a^5 \text{ with } \begin{cases} V^3(N_r^5) \text{ or} \\ N_a^5 \text{ or} \\ P_d \end{cases}$$

or any single word.

5. Utterance structure.

If we consider not the particular distributional interrelations among the morpheme classes, as expressed in section 4, but their relation to word and utterance juncture, we find that the structure of any minimum utterance (word) is either P or else

$$S(\text{a number of } T) \begin{cases} ((M_n)CT_{cv})M_v\ R \\ (M_n)\qquad\quad C \end{cases} (D)(R(D))(E)$$

The order is generally as indicated, except that the separation of R, D, and C components is not always subject to a clear ordering, and that C_o morphemes occur after $R(D)$.

All utterances are sequences of these minimum utterances within the limitations noted in section 4.

The final statement can be varied by various alternative formulations. For example, D could become an always-occurring rather than sometimes-occurring suffix of N^4 (i.e. of N and of R) if we added a zero singular to the dual and plural. Conversely, R could be reduced to a sometimes-occurring suffix of V if one of the persons, say R_3, were regarded as automatic to V, so that the mere occurrence of V included the occurrence of R_3 unless another R is specified. This could not be done to the second (R) in the formula above, since all the members of this R are occasionally absent, so that no one of them could be regarded as automatically present. In a similar fashion, M_v and C could be reduced to sometimes-occurring classes; in the case of C either C_a or C_r could be considered automatic with every N. All these variations, however, would not make a considerable change in the structural formulation.

A number of the characteristics of Eskimo as compared with other languages appear in this statement of the distributional structure: e.g. the large number of morphophonemic variations in phonemic environments (especially of morpheme-boundary consonants); the long stringing of non-initial morphemes; the fact that S and either M_vR or C occur in every non-P word (and that the occurrence of one member of each of these classes excludes the occurrence of any other member in that word). Other characteristics of Eskimo do not appear here:

chiefly, the fact that there are very many *T* morphemes; and the specific action or situation meanings of many of the *T* (e.g. -siaq *obtained*, -kuluk *lonely*, -miu *inhabitant of*, -ynit *to smell of*).

NEWMAN'S YAWELMANI[19]

1. Phonemic composition of morphemes. A major characteristic of Yokuts is the fact that morphemes of particular distributional classes have very limited types of phonemic composition. For example, all morphemes of class V^1 (not including V_a^1) consist of either 2 or 3 consonants in the odd-numbered phonemic positions, one discontinuous vowel occupying both even-numbered phonemic positions, and the length phoneme in one or neither of the even-numbered positions: xata *eat*, xaya· *place*, 'ilik *sing*, 'a·mal *help*.

Even more noteworthy are the vowel changes which take place in each morpheme when another morpheme is suffixed to it: hulɔṣ-'an *he is sitting down*, hulu'ṣu-' *he will cause to sit down*, hulṣ-atin *desire to sit down*. These vowel changes are associated with the individual suffix before which they occur, since the same type of vowel change will occur in all morphemes when -atin follows them. The vowel changes are not associated with the individual morpheme in which they occur, since the morpheme (e.g. the hlṣ" *sit down* above) has various changes, depending on which suffix follows it. We can therefore say that each of these vowel changes is simply part of the associated suffix, a part which extends over the preceding morpheme and which consists not of adding phonemes to that preceding morpheme but of replacing vowels, length, and ' within it. The number of different types of vowel change is considerably smaller than the number of different suffixes, so that there are many cases of different suffixes beginning with the same vowel change. This can be likened to the fact that different suffixes begin with the same phoneme; or each type of vowel change can be considered as a morphophonemic juncture such that each suffix occurs after one of another of these morphophonemic junctures.

A less ramified peculiarity of the phonemic composition of morphemes is the vowel harmony of suffixes. In the case of Yokuts, this term refers to the fact that the vowels in all suffixes (except the two morphemes comprising M_a) are the same as the last vowel of the preceding morpheme as to mouth position if they are the same as to height: dɔs-hɔtin *desire to report*, 'uṭ'-hatin *desire to steal*. This can be expressed by saying that the morphemes which contain a vowel determining or determined by vowel harmony contain in that position not a full vowel but rather two vocalic components, height and position, the position being a long component extending across morpheme boundary onto the next vowel place which has identical height component.

Aside from these characteristics, Yawelmani has few peculiarities in the phonemic composition of morphemes. There is a reduplicating element, i.e. one composed not of particular phonemes but of a recurrence of whatever phonemes were contained in the preceding morpheme; this is a positional variant of -da· *repeatedly*, and occurs only after two-consonant morphemes and after three-consonant morphemes before -wiyi- *do, say*. There are few discontinuous morphemes, the number of these being reduced by the fact that the verb has no subject or object pronoun affixes and hence no agreement as to number, etc., with neighboring nouns. Lastly, it appears to be unnecessary to recognize any zero morphemes (morphemes whose phonemic composition is zero phonemes), since the three zero morphemes (subjective singular, verbal noun, future) which do occur are associated each with a characteristic (and not common) vowel change in the preceding morpheme. We can say that these morphemes consist of the

[19] Stanley S. Newman, The Yawelmani Dialect of Yokuts, LSNA 222–48; Stanley Newman, Yokuts Language of California (New York, 1944).

respective vowel changes and are therefore phonemically identifiable.

2. Morpheme alternants and morphophonemes.

Few morphemes have suppletively different positional alternants. Thus there is -e· (with a particular vowel change in the preceding morpheme) *causative* which occurs only after three-consonant V^1 while -a·la· (with another vowel change) occurs after two-consonant V^1. There is -' *future* which occurs after morphemes ending in · while -en occurs after other morphemes. And -da· *repeatedly* alternates with a variant consisting of reduplication, as noted above.

There are very few cases of morphophonemic alternation involving consonants. In contrast, all the different vowel changes (different as to the vowels which are changed and as to the consonantal environment in which the change occurs) which go to make up a single vowel change type, are ultimately morphophonemic variants of that vowel change type.[20]

3. Morpheme classes.

P: particles, not occurring in one word-structure with any other morphemes. They may be subdivided as follows:

P_a: occurring only initially in utterances: 'ama' *and*, 'angi *is it that?*[21]

P_b: occurring anywhere within the utterance: 'e·man *to no avail.*

P_c: between any two words of like class: yɔw *and* (yɔw is also a member of P_a), 'i' *or.*

P_d: each occurring as an utterance by itself: 'ɔhɔm *no* (also in P_b), hiyuk *hello.*

I: initial morphemes within word and, except for P, within utterance. This includes the following distinct classes:

V^1: verb bases, which occur directly before M_i or other M_{vv}, M_{vn}, and which undergo, before these medial suffixes, the major vowel changes organized by Newman in LSNA 235 and Yokuts 23–4 (as compared with the much simpler pre-suffixal vowel changes which occur in the remaining initials or in M).

V_a^1: a few verb initials having the phonemic and morphophonemic characteristics of V^1M, but not morphemically divisible: hɔy̆le· *hunt.*

wiyi *do, say,* occurring after Q, but otherwise like a member of V^1.

Q: a group of four-, two-, and three-consonant morphemes (the first two types never occurring except before wiyi, and the first one not reduplicated) which occur before wiyi: t'apwiyi *slap.*

N^1: noun initials or roots, occurring sometimes before M and sometimes directly before F_n (with or without intervening D): k'aċ *obsidian.*

N_p: personal and demonstrative nouns, occurring before F_n and before both the dual and the plural members of D: na· I.

N_i: interrogatives, occurring before the subjective and two other members of F_n (which two varies with the particular N_i) plus -uk:

N_l: place names, occurring only before the -w *locative* member of F_n: 'alt(a)-w *Altaw,* 'a·lit *salt grass.*

M: medial morphemes, occurring after I and before F. Sub-classes:

M_{vv}: occurring after V^1 and before F_v: atin *desire to.* Some of these occur only directly after V^1 and are marked M_i; the others sometimes occur after other M_{vv}.

M_{vn}: after V^1 or V^2 and before F_n: -n *verbal noun.*

M_{nv}: after N and before F_v: -na· *procure.*

[20] The vowel changes which are included under a single type appear identical only after Newman's configurational analysis. Without benefit of this analysis they would appear to differ as between bases (V^1) having different phonemic composition, and particularly as between bases and "themes" (initials other than V^1, or sequences of any initial plus medials). For this reason, the setting up of Newman's stem types (types of vowel changes) is a compact morphophonemic organization.

[21] This could be divided into two morphemes, an introductory 'an (in P_a) plus the interrogative gi which is noted below.

M_{nn}: after N and before F_n: -iyin *one who has*, -hal *plural number*.

M_{npnp}: a morpheme which occurs after ma·- *you*, a member of N_p, and before D, with the meaning *and I:* mak' *you and I*, ma'ak' *you two*.

M_a: two auxiliary suffixes, whose vowels are not affected by vowel harmony[22] and which occur before only 5 members of F_v: -xɔ· *durative*.

D: two plural-dual suffixes, occurring before F_n. In particular:

dual: occurring only after N_p.

plural: occurring after N and N_p.

F_v: word-final suffixes which occur after V^1, M_{vv}, M_{nv}: -en *future*. Five of these, which also occur after M_a, are marked F_a.

F_s: subordinating word-final suffixes which occur after V^1, M_{vv}, M_{vn}, but differ from F_v in that they do not usually occur in an utterance without another word containing F_v (i.e. there are utterances with F_v words, and utterances with F_s words and F_v words, but only rarely utterances with F_s words alone): -e·ni *in order to*.

F_n: six case morphemes occurring after N: -nit *ablative*.[23]

[22] This can be expressed by saying that a semi-open morphophonemic juncture occurs before M_a (across which the long vowel components do not extend, as they do not extend across open word juncture), or by saying that the vowel places of M_a are occupied not by the distance vowel components (which extend in vowel harmony) but by whole vowels.

[23] These are the subjective and 5 oblique cases. The subjective consists of -i after the plural morpheme and of a particular vowel change (with zero additive suffix) otherwise. The 5 oblique cases all begin with identical vowel changes, but it does not seem useful to recognize this vowel change as a general oblique morpheme, since there is perhaps only one (syntactic or morphological) distribution which these 5 have as against the subjective and which we could say is the special distribution of the general oblique morpheme ($V_a^3 N_{obl} = V_a^3$. There is, of course, a disadvantage in recognizing the general oblique morpheme, since we would then have to specify a special limitation of distribution applying between it and the 5 specific oblique cases.

uk: a morpheme occurring after all N_i F_n: wa·tinuk *of whom?*

4. Equivalence of morpheme sequences.

V_{cc}^1 -in $= V^1$. V_{cc}^1 indicates those V^1 which contain only two consonants. -in *become, get to be*, is a member of M_{vv}. This sequence (Newman's fake base) has the V^1M internal structure, but the distribution of a pure V^1. Next to other members of V^1, -in has the effect of any other M_{vv}. Compare he·xin *get fat* ($= V^1$) and ləgwin *get pulverized* ($= V^1M$).

Q wiyi $= V^1$.

$V^1 M_i = V^2$.

$V^2 M_{vv} = V^2$. This provides for more than one M_{vv}: xat-hatin-xas *do nothing but desire to eat*, xat-hatin *desire to eat*.

$V^2 M_{vn} =$ N.

The medials which occur with V occur with any member of V. Among the few exceptions is -le· with a unique vowel change *continue;* it occurs with only a few V^1, all with three consonants and no length in first vowel place: ləgiw-le· *keep pulverizing*. In contrast, the medials which occur after N, in the next two equations, each occur after a few particular members of N. Although no limit is set by these equations on the number of medials which occur together, after either V or N, there are never more than a few in a single word, and any particular medial is not repeated.

$N^1 M_{nv} = V^2$.

$N^1 M_{nn} = N^1$.

$V^2 M_a F_a = V^3$.

$V^2 F_v = V^3$. E.g. hɔ́yle·-hin *he hunted*.

$V^2 F_s = V_s^3$.

$N_p^1 M_{npnp} = N_p^2$.

$N_i = N^2$. This is necessary because D does not occur after N_i.

$N_p^2 D = N^2$.

N^1 *plural* $= N^2$.

$N^2 F_n = N^3$.

N_l *locative* $= N^3$. The locative is a member of F_n.

We now proceed to sequences of separate words.

$N_x^3\ N_{obj}^3 = N_x^3$. $_x$ indicates any member of F_n included in the N^3; $_{obj}$ indicates the objective case member of F_n included in the N^3: yəlawć-in yəkɔ·ći *of the one who is assembling the people* can be replaced in its utterance by the first word (whose F_n is possessive case) alone.

$N_x^3\ N_{pos}^3 = N_x^3$. $_{pos}$ indicates the possessive case member of F_n: k'ać-a min *your obsidian* can be replaced in its utterance by the first word (*obsidian*, whose F_n is objective case) alone.

$N_x^3\ N_x^3 = N_x^3$. Two nouns having the same case are in apposition and may be replaced by a single one having that case: ṭa·nit pilnit *from that road* (*from that, from road*). This can be expressed by saying that the F_n is a discontinuous morpheme extending over one or more N. We might have written the equations differently: $N^2\ N^2 = N^2$, and then $N^2\ F_n = N^3$ as above, where the N^2 would now represent either one N^2 or more (depending on whether the N^2 in this last equation was a resultant of the preceding $N^2\ N^2 = N^2$ equation). A special case of this is the nominal sentence: nɔ·ćɔ(') be·mamguć *A clever fellow—Humming Bird.* (where both N have the subjective member of F_n).

$V_x^3\ N_{obl}^3 = V_x^3$. $_{obl}$ indicates any member of F_n except the subjective.

$V^3\ N^3 = V^3$.

$V_x^3\ V^3 = V^3$. The last three equations, each of which is repeatable, permit within a single utterance a number of verb clauses, each containing a number of nouns or noun phrases in addition to its verb (excluding subjective case nouns in V_x clauses), and with all clauses but one containing V_x rather than V. Yawelmani utterances apparently tend to be short, and do not eke out all the possibilities of this structure within one utterance. Note, for example, taxan'an kew mam bine·te·ni *he is coming here to ask you*, containing V^3, N_p + the locative member of F_n, N_p + the objective member of F_n, and V_x^3. The first two words constitute a V^3 clause, and the second two a V_x^3 clause.

We now consider the relation of P to utterances.

$V^1\ M_{vn} = P$. This occurs with very few morphemes of these classes: 'ut't'al *solely*.

word + gi = that word. ma' gi *was it you* is substitutable for ma' *you* in the identical environment.

word P_c word = either word (or any word of their class). We can substitute kaẏiw for kaẏiw yɔw be·mamguć in 'ama' kaẏiw yɔw be·mamguć pana·hin *And Coyote and Humming Bird arrived.* and still have a Yawelmani utterance.

some words of utterance + P_b + remaining words of utterance = that utterance.

P_a + utterance = that utterance.

We can now say that every utterance consists either of P_d or of N_{sub}^3 (*sub* for subjective member of F_n) or of V^3.

5. Utterance structure.

If we consider the morpheme classes in relation to word and utterance juncture, we find that the structure of any minimum utterance is either P or else $N_i\ F_n$ -uk or else

$$I(M_i)\ \text{(a number of } M) \begin{cases} (M_a)\ F_v \text{ or } F_s \\ (D)\ F_n \end{cases}$$

All utterances are sequences of these minimum utterances, in almost any order.

REVIEWS

LINGUISTIC STRUCTURES OF NATIVE AMERICA. By Harry Hoijer and others. Viking Fund Publications in Anthropology No. 6, New York, 1946. 423 p. $4.50.

This volume is a collection of grammar-sketches of American Indian Languages. It was first planned by Edward Sapir and is now issued in dedication to Franz Boas. There are twelve sketches written by nine contributors. An Introduction by Harry Hoijer on the linguistic families of the Americas appears as a prooimion to the collection.

In the following sections the sketches comprised in Linguistic Structures of Native America are listed separately and briefly annotated. The annotations consist of: 1) a listing of morphological processes and categories as stated by the author of each sketch, selected for their apparent primary importance to the analysis given. Not all categories are noted, only those most clearly set forth as basic and those most easily extractable; 2) quotation of some of the significant definitions of categories found in the sketches; 3) occasional descriptive remarks and criticisms of statements extracted from the sketches.

The sketches are listed in order of occurrence in the book. Hoijer's Introduction is discussed first. Hoijer gives an annotated outline of the chief classifications which have been recorded of the native languages of North, Central, and South America. His North American listings are based on Powell with the later suggestions of Sapir and others accompanying. The Voegelin and Voegelin Map of North American Indian Languages appeared too late for consultation. The Central American outline rests primarily on the works of Swanton and Thomas, Sapir, and J. Alden Mason. South American classifications derive from Rivet. Problems of conflicting interpretations of evidence in the establishment of language affiliations are mentioned only historically by Hoijer. He does not attempt to decide any questions of classification nor to present any new evidence which might bear on the problems concerned.

MORRIS SWADESH, SOUTH GREENLANDIC (ESKIMO)

Morphological Processes:

I. Suffixation

Morphological Classes:

I. Words
   1) Verbs: inherently transitive verbs, inherently intransitive verbs, double transitive verbs
   2) Substantives: normal nouns, dependent nouns, pronoun-modifying nouns, numerals, demonstrative-directionals, interrogatives
   3) Particles: modifying particles, relational particles, predicational particles, expressives, imitatives

II. Enclitics: conjunctive enclitics, emphatic enclitics, predication-forming enclitics

III. Stems

IV. Themes

V. Suffixes: subnominal suffixes, subverbial suffixes, postformative suffixes

Enclitics: "Enclitics are a class of suffixes which are semantically like independent words in that they express notions similar to those of particles, but phonetically dependent in that they are attached to the end of other words and require phonetic modifications similar to those which apply within the word."

The crude data is derived primarily from S. Kleinschmidt, Grammatik der Grönländischen Sprache (Berlin 1851), and also somewhat from W. Thalbitzer, Eskimo (1911).

HARRY HOIJER, CHIRICAHUA APACHE

Morphological Processes:

I. Affixation

Morphological Classes:

I. Words
  1) Nouns: simple nouns 1, 2; nouns derived from verbs, compound nouns
  2) Verbs
  3) Particles 1, 2

II. Morphemes
  1) Prefixes: proclitics, adverbial prefixes, object pronouns, iterative mode prefixes, distributive prefixes, deictic prefixes, tense-modal prefixes, subject pronouns, classifiers
  2) Stems
    a) Noun
    b) Verb
    c) Particle

III. Enclitics
  1) Postpositions
  2) Relatives
  3) Tense-Modal Enclitics

Words: "Chiricahua Apache words are minimum free forms composed of one or more syllables." Enclitics: "Proclitics and enclitics are bound forms which may be added to words of any form class." Hoijer says: "It should be emphasized that it is not possible to define the tonemes in terms of specific musical or physical descriptions. As for all other phonemes, the pronunciation of tonemes varies from speaker to speaker and in accordance with emotional and other factors affecting each speaker. Not only are the level (i.e., high and low) tones not always pronounced alike but there is never precisely the same interval between the two registers."[1]

It is important to make the point about the relativity or non-relativity of the intervals between tone levels. Hoijer may be confusing tonemes with tone contours when he speaks of variation in accordance with "emotional" and other factors.[2]

[1] 66.

[2] K. L. Pike (The Intonation of American English, Ann Arbor, 1945, passim) associates the tone-contours of a non-tone language (American English) with emotion, momentary feelings and the like. Perhaps the emotion mentioned by Hoijer refers to additive contours rather than to simple differences in production of the basic tones of a tone language.

LEONARD BLOOMFIELD, ALGONQUIAN

Morphological classes:

I. Word
  1) Noun
  2) Verb 1, 2, 3, 4
  3) Particle: Pronouns
  4) Suffix
    a) Final Suffixes: abstract, concrete
    b) Medial Suffixes
  5) Accretive Elements
    a) Premedials
    b) Postmedials
    c) Prefinals

II. Roots
  1) Relative Roots
  2) Reduplicative Roots

Bloomfield derives the structure of Algonquian from a reconstruction of Proto-Algonquian based particularly on Fox, Cree, Menomini, Ojibwa, and from the specific data of these languages. The sketch is followed by a useful "Bibliography of Algonquian According to Language Groups."

C. F. VOEGELIN, DELAWARE, AN EASTERN ALGONQUIAN LANGUAGE

Morphological Classes:

I. Morphemes
  1) Prefixes
  2) Suffixes
  3) Stems

II. Themes

III. Words

IV. Morpheme Alternants

Theme: "In general, any theme is taken to be a form ready for inflection; analysis of this form may reveal a stem, or stems in composition, with or without derivative or formative suffixes."

Voegelin's sketch is notable for its use of morpheme alternants in morphological description.

BENJAMIN LEE WHORF, THE HOPI LANGUAGE, TOREVA DIALECT

Morphological Processes:
- I. Suffixing
- II. Prefixing
- III. Reduplication 1, 2, 3
- IV. Iotization
- V. Length-Change
- VI. Stress-Shift, 1, 2
- VII. Contraction
- VIII. Order of Morphemes 1, 2

Morphological Classes:
- I. Sentence
  - 1) Major Sentence
  - 2) Minor Sentence
- II. Word
- III. Clause

Sentence: "The sentence may be roughly defined as an utterance that may be followed by a long pause without sense of incompleteness." Word: "A word in Hopi, may be defined as either a minimal major or minor sentence,. . .or a sentence-element of the same juncture-type and lexeme class as such a word."

GEORGE L. TRAGER, AN OUTLINE OF TAOS GRAMMAR

Morphological Processes:
- I. Affixation: prefixation, suffixation
- II. Stem-Compounding
- III. Internal Change
- IV. Reduplication
- V. Suppletion

Morphological Classes:
- I. Sentence
- II. Phrase
- III. Word
  - 1) Verbs
  - 2) Substantives
  - 3) Particles
- IV. Morphemes
  - 1) Dependent morphemes = affixes
  - 2) Nondependent morphemes

Sentence: "The phonemic limitations of the beginning and end of a sentence are the same as those of a word. . .and a single syllable may be a full sentence." Word: "Each word, whether of one syllable or more, has one loud stress. . . ."

Trager includes some definitions of basic linguistic terms e.g.: "The phonology of a language is defined as including all the phenomena relevant to the production and use of its sounds."[3] and: "Morphophonemics is concerned with the relationship of the phonemes within the pattern of function possessed by the morphemes composed of them."[4] He employs the "overt" and "covert" grammatical categories used by Whorf.

STANLEY S. NEWMAN, THE YAWELMANI DIALECT OF YOKUTS

Morphological Processes:
- I. Suffixation
- II. Ablaut Change
- III. Reduplication
- IV. Proclisis

Morphological Classes:
- I. Words
  - 1) Verbs
  - 2) Substantives
  - 3) Particles
  - 4) Interjections
- II. Themes
- III. Stems
- IV. Bases
- V. Roots

Stems: "Stems are formed from roots by processes of vowel change."

Newman's sketch covers Yawelmani, only one of the six dialects described in his larger grammar of Yokuts[5]

A. M. HALPERN, YUMA

Morphological Processes:
- I. Vocalic Ablaut
- II. Composition
- III. Reduplication
- IV. Affixation

[3] 187.
[4] 187.
[5] Stanley Newman, Yokuts Language of California, New York, 1944.

Morphological Classes:
- I. Theme
- II. Word
  - 1) Noun
  - 2) Verb

Word: "The word consists of two types of immediate constituents: a theme and non-thematic elements."

Halpern puts some emphasis on statements of the positional distribution of Yuma forms. His Tables IV and V give positions of occurrence for noun and verb forms.

HARRY HOIJER, TONKAWA

Morphological Processes:
- I. Word Order
- II. Compounding
- III. Reduplication
- IV. Affixation

Morphological Classes:
- I. Morpheme
  - 1) Themes: free, bound
  - 2) Affixes: transformative affixes, verbal affixes, noun and pronoun affixes
  - 3) Enclitics
- II. Word
  - 1) Noun
  - 2) Pronoun
  - 3) Verb
  - 4) Particle

The sketch is a brief summary of Hoijer's Handbook Grammar of Tonkawa.[6]

MORRIS SWADESH, CHITIMACHA

Morphological Processes:
- I. Juxtaposition
- II. Suffixation
- III. Amalgamation
- IV. Suppletion

Morphological Classes:
- I. Sentence
- II. Phrase
- III. Word
  - 1) Verb
  - 2) Noun
  - 3) Adjective
  - 4) Particle
  - 5) Postposition

Phrase: "The use of a phrase melody marks the phrase. The choice between two phrase melodies depends on the make-up of the phrase." Sentence: "The sentence is made up of one or more predications,..." Swadesh says: "A peculiarity of Chitimacha is the presence of a number of cases of alternate equivalent forms, not different as to meaning."[7]

The problem of determining the semantic and stylistic classification of such alternate forms seems to be open for the development of informant techniques which may clarify the situation. Similar alternates apparently exist in Seneca. A Seneca informant (Charley Butler, 1946) was able on preliminary questioning only to state the existence of the alternates and to label them as "long" and "short" forms. Further investigation for Seneca has not as yet been undertaken.

MARY R. HAAS, A GRAMMATICAL SKETCH OF TUNICA

Morphological Processes:
- I. Juxtaposition
- II. Affixation: prefixation, infixation, suffixation
- III. Reduplication
- IV. Suppletion

Morphological Classes:
- I. Stems: primary, secondary
- II. Affixes
  - 1) Derivational
  - 2) Syntactic
    - a) Inflective
    - b) Noninflective
      - 1) Preverbs
      - 2) Enclitic particles
- III. Words
  - 1) Independent personal pronouns
  - 2) Nouns
  - 3) Interrogative-indefinite pronouns
  - 4) Adjectives

[6] Harry Hoijer, Tonkawa, An Indian Language of Texas. Handbook of American Indian Languages 3.1–148 (1933).

[7] 315.

5) Auxiliary Verbs
6) Active Verbs
7) Static Verbs
8) Adverbs
9) Postpositions
10) Quantitatives
11) Comparatives
12) Sentence Connectives
13) Exclamatives
IV. Phrase

Word: "The structural elements of the word are a stem and one or more affixes."

The sketch is mainly a condensation of the previously published larger grammar.[8] Haas' statement of the morphological categories used in description is possibly the clearest of the entire book. Statements such as the following however seem relevant only to verbal imponderables and not directly appropriate to linguistic description: "The criteria needed in determining the gender-class of any given noun, however, reflect an inner or 'teleological' classification which is based on a certain few selective natural characteristics of the entity to which the noun refers."[9]

BENJAMIN LEE WHORF, THE MILPA ALTA DIALECT OF AZTEC

Morphological Processes:
I. Affixing: prefixing, suffixing
II. Reduplication 1, 2
III. Ablaut
1) Iotization
IV. Contraction
V. Compounding

Morphological Classes:
I. Paradigmatic Classes
1) Pronominals 1, 2
2) Entitives 1, 2, 3
3) Verbs 1, 2, 3, 4
II. Analytic Classes
1) Conjunctions 1, 2
2) Adverbs
3) Interjections
III. Sentences
1) Major
2) Minor
IV. Clauses
V. Phrases

Whorf employs an elaborate system of grammatical categories based on philosophical analyses of meaning.[10] Typical of his semantic discussion is the following: "There is also a semantic distinction between all nouns and all adjectives that deserves some attempt at description since it could scarcely be inferred from Western European analogies, though the author cannot hope to achieve any very good brief definement of the matter. An adjective seems to denote a portion of the objective field of space having a vague outline in which is localized a quality; while a noun denotes 1) portion of the objective field with definite or semi-definite outline (e.g., "house," "man") or 2) generalized class of objective situations (e.g., "running," "color," "whiteness") or 3) generalized class of subjective experience (e.g., "happiness," "anger")."[11]

LI FANG-KUEI, CHIPEWYAN

Morphological Processes:
I. Affixation: prefixation, suffixation
II. Consonant Alternation
III. Vocalic Alternation
IV. Pitch Alternation

Morphological Classes:
I. Word
1) Noun
2) Verb
3) Particle

Word: "A word in Chipewyan may consist of a single stem syllable, with or without prefixes or suffixes."

Two statements from this sketch may be quoted to illustrate ways in which semantic categories are made to control the formal structure of the language: "Some stems have an intrinsic number idea in themselves

[8] Mary R. Haas, Tunica. Handbook of American Indian Languages 4.1–143 (1941).
[9] 358.
[10] See B. L. Whorf, Grammatical Categories, Lg. 21.1–11 (1945).
[11] 376.

and can only be used either in the singular, in the dual, or in the plural."[12] "The future is often the same as the imperfective, sometimes the same as the perfective, and sometimes different from both, usually by an alternation of tone."[13]

GENERAL CRITIQUE

The importance of this work should not be underestimated. This importance does not rest entirely on the value of the linguistic data presented or on the principle of preservation for posterity of some of the rapidly disappearing American Indian languages (Swadesh and Haas sketch languages for which there was only one native speaker remaining). What may be a greater importance is the illustration which this compilation gives of a method or methods for the orientation of linguistic data in terms of philosophical and taxonomic categories for the purpose of organized presentation in grammars. Specifically the methods represented here are (with a few exceptions) derived from or heavily influenced by the basic dicta of Edward Sapir. At the same time the heaviness of the debt to Sapir does not militate against the claim to originality which the influenced sketches obtain. The working out of the Sapirian principles in relation to specific language tasks involves as much need for problem solving as would a language analysis otherwise based. Some of the fundamental positions indicated by these sketches may however be discussed in relationship to their general implications for linguistic work and in reference to certain alternative positions in terms of which languages may be described.

NATURE OF STATEMENTS. Some of the primary requisites for scientific statements of language structure seem to be: 1) clarity of all referents in terms of previously defined terms; 2) consistency in terms of the environment in which the statement appears; 3) economy of statement in terms of the principles of analysis which it represents. Statements constitute the descriptions of sciences and therefore possibly the sciences themselves. If they are unclear the science may be called unclear.

These requisites are stated only as a frame of reference for discussion. It is well realized that science traditionally takes an uneven course with heuristic procedures and intuitive guesses playing a large part. It is merely suggested that while the heuristic element bears relation to the desire to discover or illuminate reality, the rigorous element is pertinent only to the manipulation of data according to relationships and formulas which may be quite generally devised.

It may be said about the Linguistic Structures volume that too many of its statements seem not to satisfy the requisites stated above. This could be so to some extent because the sketches do not represent final treatments of the language problems involved. It may also be supposed that the underlying notions on semantics in structural linguistics are not sufficiently integrated with the distributional techniques to render the statements unequivocally clear.

DEFINITIONS OF "STRUCTURE." The structure of languages may be defined in two contrastive ways for relevance to the present discussion. 1) Structure equals a series of statements of linguistic classes and their interrelations based on an exhaustive distributional analysis of a given corpus of linguistic data. The series of statements may be long or short: the structure may be selective or exhaustive. 2) Structure equals a series of statements about the social function of linguistic classes in relation to a social matrix which is the total language studied. The statements are based on a preposited system of philosophical constructs which define language as a submechanism of a larger culture mechanism. The first definition differs from the second significantly in that it is a definition based

[12] 405.
[13] 408.

on problems of technique for the classification of linguistic forms according to only one main principle—that of distribution. The results of work done by this definition may be tested against statements of the techniques used in getting them. The second definition implies a postulational or axiomatic substructure for statements about linguistic forms. If philosophical axioms establishing the nature of psychological processes, of meanings absolute and relative, of human action and change, are pre-accepted, then the statements related to this definition are intelligible. By the first definition there is no attempt to define linguistic units as reality but only as operationally adaptable to certain techniques of arrangement (mathematical or logical techniques). A unit may be chosen for use in analysis simply for the kinds of relationships it can be shown to have among other units of its own type or other types. Statements (e.g. in grammars or text collections) may be made only in relation to defined units and concerning kinds of relationships among them. The second definition may or may not bear relation to concepts of reality: its statements are made in terms of complicated interpretative assumptions which may frequently render obscure the nature of the linguistic classes formulated and the references of the terms used to label them. This obscurity is associated most directly with statements or labels involving meaning terms on the one hand and distributional terms on the other. Unless consistent criteria are given for classification in relation to formal features and classification by means of meanings, an essential confusion of statement will usually result.

Many of the sketches in the present volume show a confusion of the kind mentioned above. It is not possible to discover how either form or meaning units were derived from the crude data nor how the crude data of form and meaning was obtained. Many of the statements and collocations of statements in these sketches would seem to require a clarification of the procedures which they illustrate and of the forms and units which they state.

LABELS OF LINGUISTIC FORMS. More may be said about the importance of the labels of linguistic forms in relation to the kinds of structural linguistic analysis. For consistency of statement in a system of language description the labels applied to units or classes (e.g. word; terminal suffix) should relate exclusively to the method involved in analysing out the units and classes. Thus if a class of morphemes is set up on the basis of similarity of position of occurrence in a continuous segment, the label set on that class should express the main feature of the positional similarity. Labels such as initial morpheme, terminal morpheme, connecting suffix, would be satisfactory in this context which relates to definition 1 above. If on the other hand classes are defined in terms of meaning similarities, the label should express the common semantic feature. Possessive, abilitative, noun, verb would be appropriate labels here. The real difficulty probably appears when there is a mixture of the two kinds of criteria in the determining of classes for a language. Unless the underlying definitions of formal criteria and of meaning criteria are made very clear a confusion is likely to enter. In the volume under consideration here these criteria in general are often not obvious enough and it is often hard to know whether the meaning labels represent superimposed captions on distributionally established classes or whether the classes themselves are determined by meanings.

The value of using labels at all may of course be questioned. While it may be that semantically derived classes should, for clarity, be labelled, this is not so in relation to distributionally derived classes. Statements on classes distributionally derived may include: 1) verbal definition of the class by features of position of occurrence, 2) labelling of classes by means

of letter or number symbols. Such a labelling would eliminate the difficulties of vocabulary which arise in finding labels to denote rather complex similarities of distribution among the members of a class.

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ALEUT LINGUISTIC PERSPECTIVE. By Jay Ellis Ransom. Southwestern Journal of Anthropology 2.48–55 (1946).

ORIENTACIONES LINGÜÍSTICAS PARA MAESTROS EN ZONAS INDÍGENAS. By Morris Swadesh. Mexico, D. F., 1940. Pp. 77.

TWELVE ITEMS FROM THE SUMMER INSTITUTE OF LINGUISTICS. By Herman P. Aschmann, Benjamin Elson, Maxwell D. Lathrop, Arch McKinlay, Kenneth L. Pike, Richard S. Pittman, Donald Stark, W. C. Townsend. Mexico, D. F., 1945–6.

LA CLAVE DEL LENGUAJE QUECHUA DEL CUSCO. By J. M. B. Farfan. Pp. 64. Lima, 1941; LA LENGUA QUECHUA. By J. M. B. Farfan. Revista del Museo Nacional 12.115–22 (Lima, 1943); I. — EL QUECHUA BIBLIOGRÁFICO. II.—UNA LEYENDA DEL MES DE AGOSTA EN SUS VERSIONES QUECHUA, CASTELLANA E INGLESA. By J. M. B. Farfan. Revista del Museo Nacional 12.228–38 (Lima, 1943).

BOLETIM DE FILOLOGIA 1.1–72 (Rio de Janeiro, 1946).

DELAWARE CULTURE CHRONOLOGY. By Vernon Kinietz. Indiana Historical Society. Prehistory Research Series, vol. 3, no. 1. Indianapolis, 1946. Pp. 143.

Ransom discusses the following topics: the geographic distribution of the Aleut language; the history of linguistic investigations; the work actually in progress, highlighting the special problems of Aleut. The latter include particularly the question of the relation between Aleut and Eskimo. The most recent informant work on Aleut is Ransom's own, yet to be published.

The booklet by Swadesh contains six lectures, here reproduced in a Spanish phonemic alphabet. The subjects discussed are: (1) the relation of linguistics to the education of native groups; (2) scientific alphabets; (3) "are native languages inferior?"; (4) how to teach reading and writing; (5) the preparation of materials; (6) teaching Spanish.

The little pamphlets from the Summer Institute of Linguistics involve five languages: Aztec, Mixteco, Popoluca, Tarascan, Totonaco. Half the items are from Aztec: (1) "masiewalkwikayutl", the translation of a number of hymns into the dialect of Tetelcingo, Morelos; (2) "totātajtsItsi", the translations of biblical texts into the same dialect; (3) "tlamelojkopowalI re netlokatIIIspa", biblical stories in the same dialect; (4) "in itskwímmej", an Aztec story, in the dialect of Xalacapan, Zapoaxtla, Puebla; (5) "tlaamapoaliz amoxtli", the first part of a primer; and (6) "¿tomonekItIa tomowikas IlwIkak?", scriptural verses rendered in the dialect of Tetelcingo. Items (7–8–9) are in the San Miguel el Grande, Oaxaca, dialect of Mixteco, and include animal stories, and biblical stories. The remaining selections are, (10) a Popoluca story with Spanish translation; (11) "juchári anápu", constituting volume 1, number 1, of a magazine in Tarascan, with illustrations; and (12) "talhi:n xla tapa:xuwa:n", Totonaco biblical texts.

The three reprints received from Farfan, who is Professor of Quechua at the Universidad Mayor de San Marcos, deal with various aspects of this language. The earliest of the publications gives the alphabet, the grammar (pp. 4–9), a few exercises, and the following vocabularies: Quechua-Spanish-English, Spanish-Quechua-English, and English-Quechua-Spanish. The second paper is a general discussion about Quechua and its dialects and it includes a text, "The

Fox and the Condor," in Quechua, with both Spanish and English translations. The third reprint contains a critical bibliography of Quechua linguistic publications, and a text, "Month of August," in the three languages.

The Boletim de Filologia is a new linguistic journal from Brasil, containing, in this first issue, a few scattered notes of particular interest to American Indian specialists, for instance, regarding Guaraní (pp. 70–1). The bulk of the issue is taken up by one major article on the language of the theater, several notes, reviews and bibliographies.

Although not linguistic in orientation or content, Kinietz' account of Delaware culture chronology is of methodological interest to linguists. The method used consists of the tabulation of single features of a culture, obtained either from informants or from sources, or both, and a subsequent tabular comparison of these features at different periods in the history of that culture. Kinietz proceeds from written (published and unpublished) sources to the accounts of modern informants; the opposite progression is also practicable: cf. Erminie Wheeler Voegelin, Mortuary Customs of the Shawnee and Other Eastern Tribes, ibid., vol. 2, no. 4 (1944). In the comparative study of contemporaneous dialects and in the study of the history of a language (where, after all, more or less arbitrarily selected synchronic systems are being compared) such tabular presentation of features, phonemic, morphological, and so forth, would be desirable. In some linguistic fields such methods have already been applied; not, however, in the American Indian.

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